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THE BUILDER

A JOURNAL FOR THE ARCHITECT AND CONSTRUCTOR.

WITH WHICH IS INCORPORATED THE "BRITISH ARCHITECT."

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UNIFICATION AND REGISTRATION.

THE special general meeting of the Royal Institute of British Architects which was held on Tuesday to consider a resolution dealing with the unification and registration of the profession showed, judging from the crowded attendance, the great interest which members take in the two questions, while the speakers and the final vote gave some indication of a wide divergence of opinion, though we doubt whether the voting was really representative of the views of the profession generally. The meeting was called on the requisition of a number of well-known architects whose letter appeared in our last issue, and the resolution which was moved on their behalf by Mr. A. W. S. Cross asked the meeting to express the opinion that the conditions for the unification of the profession should form part of a Registration Bill and that the present system of admittance to the Institute, including compulsory examination, should continue in force until a Registration Bill is passed. An amendment to this was moved by Mr. H. T. Buckland to the effect that as the present Unification Committee represented all sections of the profession, and was appointed to consider and report upon all questions connected with the unification and registration of architects, fuller discussion of various views was to be deprecated until the report of the Committee is presented; and further that all suggestions and proposals for carrying out the expressed wishes of the profession should be sent to the Unification Committee for consideration.

It is obvious that a discussion of the matters raised in the resolution and amendment was certain to lead to a lively and protracted debate, and from the lengthy report which we give elsewhere it will be realised that this happened, and it will also be seen that the amendment was defeated and the resolution finally agreed to, though one must add that inasmuch as the required two-third majority was not obtained the resolution in reality failed, and presumably the Unification Committee will go on with its work and in due course will bring up definite proposals for consideration by the general body. This is not to say that the vote will not have its effect. In all probability it will lead to an accession to the ranks of the new R.I.B.A. Defence League, to increased activity on the part of the Associates' Committee, and the Unification Committee itself, and it may even lead to a reconsideration of some of the views of the advocates of unification; but there appears to be no reason why the work of the Unification Committee—well begun and having apparently carried, until within the past few months, the great majority of the profession—should not be continued, as we hope it may, until it is able to present its final report for consideration.

We have been aware for some time past of the growth of the movement against unification of the profession as a preliminary step towards registration, but we had supposed that the widespread opinion that there is practically no chance at the present time of securing registration by Act of Parliament would secure support for a carefully considered scheme of unification, and that the undoubted advantages of such a scheme—though not any scheme—would make fruitful the work of the Unification Committee, always provided that the R.I.B.A. and its Associates and the Society of Architects would make an earnest attempt to secure agreement. We have previously refrained from discussing the issues raised by this movement against unification as a preliminary toregistration, and for much the same reasons as those put forward on Tuesday by Mr. Buckland, Mr. Welch—who made an able and what appeared to us a most convincing speech—and others. The Unification Committee, representing all sections of the profession, was appointed after much discussion in our columns and elsewhere in favour of the unification of the profession, and until that Committee reports, and we have its definite opinions before us, it appears to be premature to consider the points raised—reasonable enough in themselves—by Mr. Perks and his friends. The Unification Committee is in being and we understand it has already done a great deal of valuable work which will enable it to present in due course proposals for the consideration of the Institute, and we hope it will continue its labours in spite of the vote on Tuesday. The Committee was appointed in June, 1920; it has adopted the scheme of absorption recommended by its sub-Committee, and this scheme was accepted by the Council of the R.I.B.A. in May last year. The scheme was referred to the Associates, who appointed a Committee which is still collecting the views of Associates throughout the country, and has not yet reported; while the Licentiates appointed a Committee to consider the matter. All bodies concerned are carefully considering the question, and there seemed until recently to be a reasonable prospect of the Unification Committee being able to arrive at some definite recommendations which, if not altogether acceptable, would form the basis for negotiation between the interested parties. Until quite recently there appeared to be complete willingness to let the various committees proceed with their work, and we are at a loss to understand why, at this eleventh hour and after so much useful work has been carried out, and so much agreement reached, we should have this cross-tracking movement, which if successful must bring the movement for unification to an abrupt end. Is this desirable? Is it desirable that the profession should remain in the position it occupied during the war? If not, why should the work of the Unification Committee be violently disturbed and the movement prematurely brought to an end? Surely the better course would be to permit the Committee to finish its labours, present its recommendations, and then, if necessary, decide on the order in which registration shall be taken. The advocates of registration appear to be frightened by the feared results of registration, and in their objections to unification because it will result in the inclusion in the ranks of the Institute of all the rag, tag, and bob-tail of the profession—to use the words of one of the speakers on Tuesday—they are heard voicing the views of ardent anti-registrationists. Though the case for the resolution was temperately and fairly stated by those who supported it, we listened with amazement to arguments from lifelong registrationists which, directed against the unification of the profession as a preliminary step to a Registration Act, appeared to be altogether inconsistent with their well-known views as registrationists We can understand and sympathise with the views of those members of the Institute who have passed the qualifying examinations and who object to the inclusion of men who have not, but we cannot understand the objection of avowed registrationists, who are willing to admit all practising architects under a Registration Act, objecting to such unification of the profession as can be secured by agreement. But the miracles Time can bring are constantly confronting us, and if we bear ourselves with patience a little longer, and do not upset by disruptive efforts the work of our appointed representatives, may we not look to Time to do for a much-harassed profession what we have seen it accomplish recently in the world of politics?

NOTES.

The President's Address to Students.

We imagine few of the students to whom the President of the R.I.B.A. addressed himself on Monday night would fail to derive encouragement and hopefulness from his words. He is surely right in maintaining that the struggle for position or supremacy is relatively no harder now than it has been in the past, unless perhaps in the increasing necessity for a wider general culture and sympathetic outlook on all the agencies at work for the betterment of human life. The architect nowadays will fail to reach the full measure of his powers unless he assimilates a great deal of knowledge that cannot be found in the text-books.

The Royal Gold Medal.

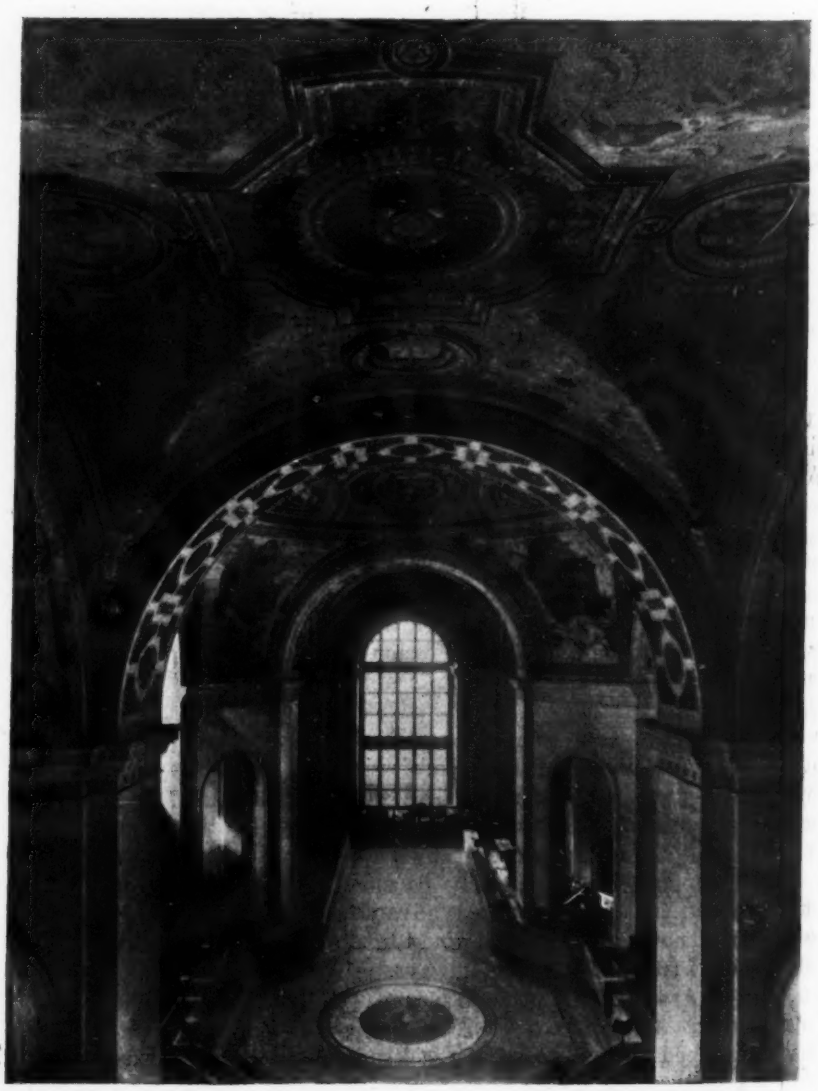
American architecture has reached such a high level of excellence that the proposal of the Council of the R.I.B.A. to submit to the King the name of one of the best known American architects, Mr. Thomas Hastings, will be received with general satisfaction. Mr. Hastings is a member of the firm of Carr re and Hastings, of New York, much of whose work has been illustrated in our pages from time to time, and this week we give some interior views of the Cunard Building, New York, of which Mr. B. W. Morris is the architect and Messrs. Carr re and Hastings the consulting architects. We hope Mr. Hastings will be able to visit our shores to receive the Medal in person.

Discussion on Furniture.

The second of the series of public discussions on art in industry from various aspects, arranged in connection with the current exhibition of the British Institute of Industrial Art, was held in the North Court of the Victoria and Albert Museum on Friday last week, when the subject discussed was furniture. Sir Charles Allom, who presided, explained that the speed at which the exhibition had been inaugurated made it difficult to include the highest branches of the trade, and that they might have had a better exhibition of furniture—which is no doubt the case; he also spoke of the obligation to patronise the modern craftsman instead of depending so much on the buying of antiques—that what we needed to encourage were native sources of talent instead of the more derivative furniture of the "period" kind, Chippendale, Hepplewhite, Sheraton, or any other. Mr. Collins Baker, who followed, spoke of the charm of painted furniture, and of the desirability of avoiding extremes either in the way of furniture influenced by the Russian ballet or of a too self-conscious simplicity. It is difficult not to be trite on a subject which has been thrashed out so often, and our feeling is that "craft ideals" have been talked about over the past thirty years almost to exhaustion. In pointing out that honesty of purpose was the background on which the prospect of the future of furniture lies, the speaker touched the heart of the whole matter. The issue in this sense is really quite a simple one.

Large *v.* Small Workshops.

The most vital remarks as showing the intimacy of the speaker with this subject were made by Mr. Spooner, who expressed some disappointment at the present level of furniture, in which much improvement was not yet made manifest. Dwelling on the factory system and industrialism generally, he seemed to find the solution in giving sufficient encouragement to the work of the so-called "artist craftsman" (a cumbersome title), to enable him to become an influence running alongside of the factory's mass production and to keep it at a certain level. Whether such a suggestion holds in it much hope or validity may be doubted. It seems to us that the differences of conditions as between factory and workshop practice are too great, and it may even be doubted whether a great increase of the small workshop, where furniture was made on a sound craft tradition, would not produce, if extended wide enough, as much as is turned out by the factory. If there were a thousand small workshops where now there is one, mass production would result, but with all the advantage arising through the variety growing out of personal attributes in the work executed, and with the increased freedom to the worker to give expression and character to his work, and without destroying the countryside. Mr. Spooner told us that "large production and sensitive furniture is incompatible." Does it not suggest to him that instead of compromising between the factory for mass production and workshop practice it would lead more directly to a solution to accept this incompatibility, and educate the public to a desire for a restoration of workshop practice on the widest scale?



Ceiling Detail of the Great Hall: Cunard Building, New York.
Mr. B. W. Morris, Architect; Messrs. Carrère & Hastings, Consulting Architects.

Committees of Selection

IT is agreeable to see that public recognition by prominent writers and others is now coming forward in support of the objection so often advocated in these columns against the dependence on committees, experts, and others as a security for art. In a letter to *The Times* Mr. Clutton Brock points out that "pictures cannot be successfully bought by a committee," and we might add, neither can town halls be decorated through a "mass production" of experts! The writer goes on to say, "to be done successfully, there must be audacity and adventure and conviction, all of which a committee necessarily lacks." We must not, in fact, be afraid of making mistakes. Mr. Clutton Brock continues: "In a committee there must be compromise, and compromise always means the second, or the third, or the fourth best, or even the bad." What a vast difference it would have made to the art of the country if this had been recognised some years ago! Abuses cure themselves, and this is a case in which we are glad to see they are at last doing so; for in addition to Mr. Brock's letter we have Mr. D. S. MacColl, in the same contemporary, informing us that "committees, being political associations formed for the purpose of compromise, are the least fitted bodies for choosing pictures," and we might have added sculpture or anything else. The public must learn to take their own responsibility and to have the courage to go directly to those living and struggling artists who deserve encouragement—and they are almost invariably the best ones. As it is, those artists—seldom the best—are most encouraged who do not need encouraging, because committees trust only to the security of names.

The British Empire Exhibition.

WE are glad to note that the required minimum of £1,000,000 has been obtained for this exhibition and trust that there will be sufficient appreciation of the aims which are necessary to make it successful. In the appeal by the Prince of Wales to the banking, commercial, and industrial interests of the country "to display their faith in our common future" we should like to believe that there was adequate understanding of what that future is to be, for a future dependent only on exploiting new markets and expanding trade is a future that may well seem uncertain to the more thoughtful of us. The happiness of a people does not lie in the abundance of its possessions or on those things which expand and supply its material wants alone. The only ideal adequate for industry is one based on the high standard and approach we bring to it—an adequate representation of beauty and craftsmanship. Banking, commercial, and industrial interests are not everything.

Doorway and Vestibule to Great Hall. Cunard Building, New York.
MR. B. W. MORRIS, Architect; MESSRS. CARRERE & HASTINGS, Consulting Architects.

Royal Academy Exhibition, 1922.

ONCE again our thoughts are directed towards the Annual Exhibition of the Royal Academy, by the issue of the notice to artists, which has just come to hand, for the year 1922. The specified days for receiving works, which must be delivered at the Burlington Gardens entrance, are as follows: Water colours, pastels, miniatures, black and white drawings, engravings, and architectural drawings, Friday, March 24; oil paintings March 25 and March 27; sculpture, March 28. It will be seen from the above that there are only six weeks left in which to prepare drawings for the architectural room.

The Eight-Hour Day.

THE eight-hour day would appear to have distinct advantages for employer and employed in some industries, but would it be suitable for every kind of industry? In a letter which we print this week, Mr. J. W. Laing, of Messrs. J. W. Laing, the well-known contractors of Carlisle, points out some of the benefits to the building trade derived from the arrangement, and we think with him that the employee would prefer to start work at 8 a.m. after breakfast by his fireside, rather than at 6.30 a.m.! The two periods of four hours each and no consequent loss of time would also seem to be greatly to the advantage of the employer, if the working day is to be one of eight hours.

Cottages and Disfigurement.

THERE will be many sympathisers with the writer of a letter the other day who says the disfigurement of England cannot be forgiven. "In every village and town the monstrously hideous erections put up by the Government at the taxpayers' expense confront the eye. They cannot be mistaken; their regular alignment, their hideous uniformity, and their dreadful slate roofs catch the eye in lovely villages where only pantiles or stone-tiles were formerly to be seen and where no two houses were ever alike. They are the sign of vulgar mediocrity, and age cannot make them beautiful. The only hope is that they may speedily be pulled down. Nobody except officials or tradesmen can afford to pay the rent for these unsightly houses, and they are therefore useless to the class for whom they were intended. The Royal Institute of British Architects might have protested publicly against this monstrous desecration of villages and towns built by a wiser and more artistic generation, even if they could not prevent the Government scheme from going forward. It is sad to think that beautiful and comfortable cottages might have been built at a tenth of the cost if the Government had allowed architects and landowners to have a voice in the matter."

GENERAL NEWS.

Professional Announcements.

Mr. Sydney Tatchell, F.R.I.B.A., has been appointed by the Council of Almoners the Surveyor to Christ's Hospital, on the retirement of Sir Alexander Stenning, who has acted in this capacity for upwards of twenty years.

Owing to the fire which occurred to the premises at 133, High-street, Guildford, Mr. Wilfrid L. Evershed, P.A.S.I., has taken "Malton," 27, Farnham-road, Guildford, to which address communications should be addressed.

Obituary.

The death is announced of Mr. Andrew Young, late Valuer to the London County Council, at the age of 73 years, which occurred at the South of France, where he had gone for the benefit of his health.

The death is announced of Major C. J. C. Pawley, at the age of 68 years. Major Pawley was well known as the author of a much-advertised scheme for an Empire War Memorial at Westminster.

The Foundling Hospital.

The Foundling Hospital, in Guildford-street, Bloomsbury, comprising about nine and a quarter acres, is offered for sale by the Governors, the price asked being about £1,000,000. It is suggested that the building now offered for sale would be suitable for a museum.

The Society of Antiquaries.

At a meeting of the Society of Antiquaries of London last week the following were elected Fellows:—Lord Mostyn, the Rev. S. W. Wheatley, the Rev. J. M. Blake, Major H. G. Parkyn, Mr. F. B. Andrews, Mr. J. H. E. Bennett, Mr. Dudley Cory-Wright, Mr. R. W. Crowther, Mr. W. G. Klein, Mr. A. F. Major, Mr. Joseph Sharpe, and Mr. A. B. Yeates.

London University Site.

The Education Committee of the London County Council last week rejected by a large majority an amendment that the London County Council should again press upon the Board of Education that the site at Holland Park should be carefully considered for the London University as an alternative to "the restricted and far more costly site at Bloomsbury," and the recommendation of the sub-committee on the matter stands.

Architects' and Surveyors' Assistants' Professional Union.

With reference to the ball at Australia House, Strand, reported in *The Builder* last week, we are asked by Mr. W. H. Jackson (Secretary, Metropolitan Branch, A.S.A.P.U.) to say that Mr. J. A. Gould (Secretary, Social Sub-Committee) was responsible for the ball and its great success; indeed, the whole success of the social programme of the Metropolitan Branch for the year 1921–22 was due to his efforts and the hard work of the Social Sub-Committee. The Chairman of the Social Sub-Committee is Mr. W. S. Datton, and Mr. W. H. Hamlyn, A.R.I.B.A., is President of the Reception Committee. We congratulate the Metropolitan Branch on its social evenings, and hope they will continue the good work they are doing in bringing together members of the two professions.

Proposed New London Amusement House.

It is reported that London is to have a large new amusement house, which for exhibition purposes will eclipse in size Olympia or the Royal Agricultural Hall. Negotiations have just been completed for the sale of the site to a syndicate, of which Mr. C. B. Cochran, the theatrical manager, is the managing director. It is stated that seating accommodation will be provided for 60,000 people. The purchase price is believed to be £1,000,000. The position of the site has not been divulged but is said to be in the heart of London. When completed the building would be available for trade exhibitions, motor shows, big spectacles, athletic events, and boxing tournaments. In addition to the main hall it is proposed to erect a music-hall to accommodate 3,000 people. There will also be ample space for the general offices of the company and a restaurant.

A Gimson Memorial Volume.

A Committee has been formed for the purpose of preparing and publishing by subscription a memorial volume of the work of the late Ernest W. Gimson. It will contain chapters dealing with his life and work written by Mr. F. L. Griggs, Professor W. R. Lethaby and Mr. Alfred H. Powell, who will have the assistance of his life-long friend, Mr. Sidney H. Barnsley, and of his brother, Mr. Sydney A. Gimson. There will be illustrations in the text from drawings by Mr. C. M. Gere, Mr. F. L. Griggs, and Mr. Alfred H. Powell, drawn for this work. It is proposed that the memorial volume shall contain also about sixty photographic reproductions from Ernest Gimson's original drawings and executed work in architecture, furniture, plaster work, iron and brass work, and embroidery. It is proposed that the edition be limited to 300 copies, of which 288 will be available for subscription. It will be issued from the Shakespeare Head Press, Stratford-upon-Avon. The price will be two guineas a copy net.

COMPETITION NEWS.

Seaford.

The premiums in the Seaford Lay-out Competition have been awarded as follows:—

First (£50).—Mr. Philip Shuter, "Glyn Garth," Le Brun-road, Eastbourne.

Second (£25).—Mr. Stanley V. Hart, 25, Pendlestone-road, Walthamstow, E. 17.

Thirty designs were submitted. The approximate cost of carrying out the winning design is estimated at £11,000.

Nottingham.

The Nottingham Corporation has decided to offer two prizes for the best designs for new buildings to be erected on the Exchange site, which is one of the most valuable in the county for commercial development. It has been arranged to ask the President of the R.I.B.A. to nominate an adjudicator.

Other Competitions.

Other competitions still open include the following (the dates given are, first the sending-in date, and second the issue of *The Builder* in which full particulars were given):—Auckland war memorial (May; Sept. 2, 1921); Trujillo (Peru) monument—banned by R.I.B.A. and S.A. (June; Jan. 13); Dundee war memorial (April 3; Jan. 6); Malvern public baths (banned by R.I.B.A. and Society of Architects); Cairo Hospital (Dec. 23, 1921; Feb. 3).

Kensington War Memorial: Detail.

MAJOR H. C. CORLETTE, O.B.E., F.R.I.B.A., Architect.

[The Kensington War Memorial, of which the above is a detail, is to be erected in St. Mary Abbot's Churchyard, Kensington. The memorial was illustrated in our issue for October 21, 1921.]

CORRESPONDENCE.

The Late Mr. Ernest Newton, R.A.

SIR,—In the interesting account of the works of my friend (for forty years), it is said that I helped in the building of Hither Green Church; it should be added that the cause of this was Mr. Newton's illness and consequent absence for a month or two on the Continent. During that time I settled such details as were required, that was all.

May I add that I wish some way could be found for continuing Mr. Newton's work in the public interest for mitigating the now unmitigated smoke nuisance?

W. R. LETHABY.

Proposed "Restoration" of the Parthenon.

SIR,—It is sincerely to be hoped that the re-erection of the fallen columns of the Parthenon may be abandoned, as the result can only be disastrous. As is well known, the drums of the columns were placed one on the top of the other unfluted, a piece of hardwood was let into the centre of each drum, and a pin into the centre of the wood. The drums were worked backwards and forwards with this pin as an axis until the joints were practically invisible; the columns were then fluted from the top to the bottom and formed one harmonious whole.

When the Parthenon was blown up, the drums of the columns were scattered in all directions and the edges broken, and it was impossible to tell to which particular column many of them belonged.

The hideous result of the three columns partially re-erected in King Otho's time ought to be a sufficient warning to those who are now preparing this hopeless "restoration," and waste of money.

I do not think I am wrong in saying that these were the views held by Dr. Penrose, who to the best of my belief deprecated any "restoration" beyond what was absolutely necessary for the safety of the building. Dr. Penrose wrote "Anomalies in the Construction of the Parthenon" (published by the Dilettante Society in 1847) and "Principles of Athenian Architecture" in 1851, completed in 1888. His exhaustive and minute measurements finally established that what is apparently parallel or straight in Greek architecture of the best period is generally neither straight nor parallel, but curved or inclined. This fact makes it still more imprudent to attempt to reconstruct the original design by any hard and fast rule.

ARTHUR F. G. LEVESON GOWER,
Society of Antiquaries.

Unification and Registration.

SIR,—After attending the meeting of Associates at the R.I.B.A. on January 24 last, I have arrived at the conclusion that several alterations will be necessary in the scheme as drafted by the Committee before it is likely to receive the unanimous approval of the Associates.

The feeling of the members (expressed and suppressed) would, I think, be met by the following amendments:—

PRINCIPLE 3.

There shall be not less than six classes of Subscribing Members (more if possible), as follows:—

ASSOCIATES (large capitals) who have passed the R.I.B.A. Examination.

FELLOWS (capitals) who have passed the R.I.B.A. Examination.

FELLOWS (small capitals) who have *not* passed the R.I.B.A. Examination.

LICENTIATES (very small capitals), existing Licentiates of the R.I.B.A.

LICENTIATES (ordinary type), existing Licentiates of the S. of A.

M.U.G.S.—Members and unattached, and generous subscribers.

QUALIFICATIONS.

FELLOWSHIP.—To qualify for Fellowship, candidates must have some slight knowledge of tracing, and be vouched for by at least one contractor and one house agent.

ASSOCIATESHIP.—Admission to the Associate Class shall only (in future) be open to candidates who have spent five years in a school of architecture, passed all R.I.B.A. Examinations, and have a thorough knowledge of the use of French blue and gold strips.

LICENTIATES.—Members of Society of Architects and allied societies who do not qualify for Fellowship, as above.

M.U.G.S.—All unattached architects who have been engaged in the practice or study of architecture for at least twenty-five successive years and can produce evidence of not less than six large buildings carried out by themselves.

It was further thought that in view of the enormous sacrifices entailed by the Associates by the scheme as outlined above, and to safeguard the interests of their class, NO steps be taken in the furthering of the scheme for at least twenty-five years.

"A.R.I.B.A."

Unburnt Bricks.

SIR,—About two years ago you printed a letter (or was it two letters?) of mine on using for simple buildings such as ordinary houses and cottages, unburnt bricks, especially for inside walls. I advocated this on the ground of utility and economy, and instanced old and new buildings where such bricks had been used in this part of England. I placed the matter before Mr. J. W. Simpson, the then President of the Royal Institute of British Architects, who, with his usual perspicacity, deemed it worthy of investigation, and promptly asked the Science Committee of the Institute to take it up; but so far as I have learned that Committee did not proceed very far.

Now I should like to point out the great saving to the country that would have been effected had the Institute satisfied itself and given its official sanction to the use of such bricks, for doubtless the Ministry of Health would have approved them had the Institute done so. One of the best brickmakers in these parts told me only a few months back that a saving of about £2 per 1,000 would be effected by not burning the bricks—he was speaking of cost in regard to an ordinary country brickyard. Assuming that half the Government's scheme of 176,000 houses are brick houses, and the inside and internal walls of unburnt bricks, a saving of about £2,200,000 would result. Allowing £800 per house this would have built 2,750 houses, or about 1-32nd part of the whole of the Government's scheme so far as brick houses are concerned. This would then have been the gift to the nation by the architectural profession, and, as the Director-General of Housing would have shared in this benefaction, he could hardly have taunted the profession as he has done (unjustifiably in my opinion) with not rising to the housing occasion.

Your last week's issue contains a lecture by Professor Laurie on sand-lime bricks as a suitable and economical substitute for ordinary burnt bricks where brick-earth is not found, but where sand and lime, etc., are found. I can verify from twenty years' personal experience the good qualities of these bricks. The drawback is the special plant required to make them. The unburnt bricks I speak of are just the ordinary brick-earth brick, made in the ordinary way in any ordinary brickyard, but not put into the kiln; there is nothing to buy, nothing to learn.

In your last week's issue (page 198) Mr. Briggs enlightens your readers as to the countries that did use unburnt bricks even in their most sumptuous buildings, and for preference and not for economy, as any of your readers who will look up Vitruvius will soon see.

Now we rightly follow the skill in design of these illustrious peoples, Egyptians, Greeks, and Romans; we cannot get away from their influence, yet we wholly slight their prudence in using so good and so economical a building material. On the score of economy alone, we are are not justified in squandering coal and labour in burning bricks that would be just as useful unburnt. The Ministry of Health permits unburnt bricks in the shape of clay lumps, but I have never heard that the use of unburnt ordinary bricks is permitted.

There is still a good deal of cottage building to be done, and "it is never too late to mend," hence this letter advocating that in future a definite permission be given to use unburnt bricks, as well as clay lumps. As to the latter, I am building about forty cottages with them, and I believe they will be not only as good but better than the ordinary brickwork cottages.

It is very flattering to have engineers from some of the principal railways of India come over to see how we build with clay lump, and more flattering to have them go out thoroughly satisfied with what they have seen.

GEORGE J. SKIPPER.

Norwich.

P.S.—Whilst we have permission now and until June of this year, I understand, to use these and other new materials and methods, are we to lose this advantage after June? We need bestir ourselves in this matter.—G. J. S.

Qasr-el-Aini Hospital and School.

SIR,—With reference to the paragraph in your last issue, which purports to give the names of the six architects invited to take part in the final competition for this work (in addition to the six architects selected in the preliminary competition, whose names have been officially published), I am requested by His Highness's Government to say that the information you have received is unauthorised and inaccurate.

JOHN W. SIMPSON.
Assessor.

The Eight-Hour Day.

SIR,—We observe that there is to be a determined attack on the principle of an eight-hour day in the building trade. As considerable employers of building labour in almost all parts of Britain, and having for many years made a special study of the costs of labour in the building trade, we wish to express our views and the result of our experience, namely, that an eight-hour day produces almost as much work as a nine-hour day. With an eight-hour day a man is physically master of his work, is not jaded, and works pleasantly and without strain. It is under these conditions that the best output is obtained.

A builder is exposed to the heat in summer, and, what is even more trying, cold winds and beating rain in winter, so that more than in some other trades he requires to be physically fit. An eight-hour day allows conveniently two periods of four hours' work with one hour interval for food and rest. The output after four hours' work without food drops considerably with most men. If a nine-hour day is worked it is usual to stop for two meals. The loss of time and disorganisation through stopping and starting, getting to and from work in a building, also the warming of food for this extra meal, is very great.

As a proof of the effect of increased hours on output, when we have contracts in isolated places where all the men are in lodgings they ask permission to work longer hours, but even with our best men, who are eager workers, we find the cost of labour increased about 20 per cent.

Some may ask, "Did the introduction of an eight-hour day increase the output?" We regret to say that for a considerable time it did not, but the reason was that owing to congestion of work and the reaction after the war many men were not trying, and when that is the case there is little or no advantage in short hours. Even where men do their best it takes considerable time before the result of a change is apparent. By the latter half of 1921 on some contracts the output per eight-hour day had reached the pre-war nine-hour day output.

So far everything we have put forward is entirely from an economic standpoint, but the pleasure of life is increased immeasurably by an eight-hour day, when the men start work at 8 a.m. after a comfortable breakfast at home,

and stop at 5 p.m., as compared with starting work at 6.30 a.m. and having a snack-breakfast on the building, often in cold weather, in uncomfortable surroundings.

We strongly advise concentration on getting eight-hours' actual work—let the men be on the scaffold at starting and stopping time—and give the eight-hour day at least another year's trial, which, owing to the abnormal conditions of trade having passed, will be a truer test than the past year.

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Carlisle. J. W. LAING.

Architects and Housing.

SIR,—With reference to the charges brought by Sir Charles Ruthen, Director-General of Housing, against the architectural profession, I ought to narrate what was my experience while Housing Commissioner from March, 1919, to September, 1921 :—

(*a*) The plans, &c., submitted by architects for the local authorities in the Region were very rarely in excess of the standard set in the "Manual for State-Aided Houses" issued by the Ministry of Health in 1919, and in the model form of specification similarly issued.

(*b*) The Ministry, soon after the inception of the scheme, began reducing its own standards, and continued doing so until contracts were stopped in 1921. The policy of reducing amenities was never publicly given out, and architects could only become aware of it by finding their plans and quantities, drawn up in accordance with the Ministry's Manual, cut down in the office of the Housing Commissioner.

(*c*) Commissioners continually advised the Ministry against this policy of attrition.

(*d*) The control of the situation was all along entirely in the hands of the Ministry through the Memoranda which it issued to the Commissioners. Any detail of plan or specification which exceeded the instructions (to Commissioners) of the Ministry was as a matter of course cut out. Moreover, even if the plans were in accordance with the Ministry's standard at the time they were submitted, yet, if the lowest tender exceeded the Ministry's limits, the amenities were cut down still further by the Commissioner under the orders of the Ministry. Not infrequently further excisions took place at the Ministry itself, after the plans, &c., had been passed by the Commissioner.

It must therefore be clear to any impartial person that the architectural profession is blameless in the matter. I am not an architect, nor am I now an official, and therefore may, perhaps, be considered to hold a neutral position.

E. N. MOZLEY, *Lt.-Col. R.E.* (*retired*).
Late Housing Commissioner
for the South-West of England

Housing and "How not to do it."

SIR,—It has recently been said that architects are responsible for the fiasco which has occurred in State housing for the working classes, but it seems to have been forgotten that Dickens's "circumlocution office" still exists, and that the then small family of "Tite Barnacles" has increased until it has now reached the respectable number of 352,000. The following personal experience may show how much the public was helped by the Ministry of Health during the period when half-a-million dwellings were promised "fit for heroes to live in."

The Ministry of Health had raised objection to a design which rendered unnecessary eaves gutters and rainwater pipes, and I was asked by the inventor to inspect a house at Hertford which had been erected in about one month in accordance with that design at a cost of about £400. I made the inspection on December 29, 1919, and reported that in my opinion the house was "thoroughly sound and stable," and in this I was supported by a well-known consulting engineer. The Ministry of Health had stated that the system of construction shown could not be sanctioned, and gave some very amusing reasons why, amongst them being that "a heavy blow, especially from the inside, might endanger the structure, and under wind-pressure there would be a tendency for the building to be flattened on the windward side and for the apex to be lifted." It subsequently transpired that the Ministry's experts had been much perturbed by this fear of wind-pressure, and on April 30, 1920, finally decided that official sanction could not be given to the design; nevertheless, the Committee graciously condescended to receive a deputation on the subject, and the consulting engineer and I were asked to appear before the Committee and give evidence. The meetings took place on January 28 and April 21, 1920. The Chairman was supported on either side by two expert engineers, and on each side of the table by three or four gentlemen who did not seem to realise why they were there, the room being further embellished by a lady taking notes, but not in shorthand. The Ministry's experts had devoted some six months to this terrible risk of wind-pressure, and succeeded in showing that by a mass of calculations applicable to the Forth Bridge this domestic structure, 35 ft. in height, at Hertford, might at any time be blown into the nearest field. After listening patiently to all this rubbishy stuff, I could not resist telling the Chairman that the whole business was to my mind a waste of time and a shocking waste of the public money.

The lamentable part of the matter is, however, that the company formed to build the houses was ruined, and the labouring classes deprived of houses which they could have occupied at economic rents. And yet we are told that architects are the cause of all the trouble!

WM. WOODWARD, F.R.I.B.A., F.S.I.

Architectural Competitions.

SIR,—I should like to be allowed to congratulate you on the appropriateness of your leading article of last week. This is indeed the time for the architectural profession to put its house in order. Much has already been achieved for architectural education, and the subjects of unification and registration have never received such universal consideration as now.

Although not perhaps superficially of such great importance as these last two subjects, the conduct of architectural competitions is yet of the greatest importance, and particularly so to the general body of the profession and to the coming generation. The present system that has been slowly evolved is very far from perfection, and its reform is imperative. Can it really be maintained that a single assessor, who, however highly qualified, was yet brought up in the rather casual and rather individual manner in which, alas! all too many of us have also been brought up, who certainly has since developed strongly individual opinions on most subjects, can rightly judge between fifty, one-hundred, or even two-hundred designs? Can one man always be trusted to set aside his personal appreciation of a subject, his personal bias, and reason out with hard, dispassionate logic what are the possible right solutions of an architectural problem? Even, if he could perform with absolute sureness this highly-difficult feat, would not the body of competitors all the same feel that greater justice, greater care and sureness in selection would result from the discussion of the problem by a jury of three able men? Modern design is not an easy subject about which to dogmatise. Why should assessors be paid for the honour and confidence the profession as a whole shows them in choosing them as assessors? Do they not regard the task as a duty to their colleagues? They are busy men, it may be urged, and should be remunerated for their time and labour; would they not, however, still be sufficiently paid if the generally ample fees were divided among the three members of the jury? Are not French and American architects busy men also? I am sure the general body of the profession is not content with the present arrangements; through inertia only have they allowed them to exist so long.

I hope, Sir, the question you have raised will be thoroughly debated in your columns, and that some tangible improvements will result. There is a French saying, "*de la discussion nait la lumière.*"

VERNER O. REES.

Competitions.

SIR,—I was interested in the leading article in *The Builder* for February 2 on French public competitions, and I feel strongly that the jury system is far better than our one-man assessor. I think the publicity of the results of recent competitions is not carried out so usefully as in the good old days before the war. Rarely is the assessor's report published, and often only the winning design is illustrated. Personally, I think unsuccessful designs of merit should be published. One sees so often, when the first three designs are published, that the 2nd and 3rd were better than the 1st. One wonders, what of the designs relegated to the dustbin? I think we are all interested in the designs of our fellow architects, even though they are not successful in a competition. A concrete instance will show what I mean. Unsuccessful designs for two war memorial competitions were sent for publication. The Editor informed the author that he would publish them, as they were very excellent designs. On hearing they were not to be carried out, they were not published; the reason given being that the publication might annoy unsuccessful competitors whose designs were not good enough to illustrate. In one of these competitions only the winning design, beneath criticism, was published, without comment; no other design being illustrated. To repeat a sentence from your leader, "the necessity for publishing a report" (and, I would interpolate, the publication of the best unsuccessful designs) "would inevitably work for the most careful assessing and would give universal satisfaction to competitors."

J. A. HALLAM.

[***We are always glad to publish unsuccessful designs of merit and frequently do so, but obviously we cannot publish everything nor even all the successful designs we should like to, and probably the journal referred to has been under the same difficulty.—ED.]

Registration of Architects.

SIR,—With reference to the Note on page 176 of your issue for the 3rd instant regarding the proposed registration of auctioneers, estate agents, and others, the words "but even then it is admitted that Parliament is not likely to allow the living of any man not a member of these institutions to be taken away if he is actually in practice" are equally applicable to the proposed registration of architects. There seems to be only one solution to the problem arising therefrom, and that was fully set out in my letter published by you last July. I can quite appreciate the attitude of members of the R.I.B.A., if that Institute *must* be the controlling body under the registration scheme, but it is perfectly easy to create a *new* Institute to become the controlling body, leaving members of the R.I.B.A. and the Society of Architects free to glean any advantage that may accrue to them through the extra letters displayed after their names, as at present, if they so desired. Certain it is that the "free-lance" architect practising on his own account is not going to allow himself to be quietly ticketed as inferior in the public eye to, say, a young "A.R.I.B.A." who is only an assistant, and possibly a fair junior assistant. However, the Unification and Registration Committee has doubtless seen these points, and its common sense will prevent any fatal mistakes due to over-strong *esprit-de-corps*, which might otherwise wreck the good ship "Registration"!

R. D. SIRLEY.

[A report of the meeting of the Unification Committee and the general body of the R.I.B.A. on the subject is given on page 222.—ED.]

Whickham War Memorial.

The Whickham War Memorial Fund has approved plans and a tender for the erection of the village memorial. The plans have been prepared by Mr. J. B. Renton, architect and surveyor, of Whickham and Newcastle.

ON Monday last, at No. 9, Conduit-street, W.1, MR. PAUL WATERHOUSE (President) occupied the chair at a general meeting of the Royal Institute of British Architects.

The late Ernest Newton, R.A.

After the minutes of the preceding meeting had been passed, MR. ARTHUR KEEN (Honorary Secretary) moved that an expression of sincere sympathy be conveyed to Mrs. Newton and those who shared with her the loss by death of Ernest Newton, R.A. The death of Ernest Newton, he said, touched him very nearly. Mr. Newton was undoubtedly one of the most successful architects of this generation, and he was one who deserved every ounce of the success he got. He served the State during the difficult years of the war with singular ability and success, and he served the Institute in a way that won for him the respect and esteem of every member. He also moved that the regrets of the Institute for its loss be entered on the minutes.

THE PRESIDENT seconded the motion and said he, like many other architects, had lost a very true friend. Of Ernest Newton's professional career he would say nothing, but of his character one could not help saying a word. It was hard to find the word that described Ernest Newton's charming grace and manner, but perhaps the best word was "innocence," using that word in its best sense; he was a man of supreme gentleness; good fellowship was his characteristic—not merely was he a prince of good fellows but his fellowship was invariably good.

The vote was passed in silence.

A motion was also passed that a message of condolence be sent to the relatives of the late Henri Favarger, F.S.A. (Fellow).

Address to Students.

THE PRESIDENT then gave an address to students, in the course of which he said there were three unfailing ingredients in an address to students: a congratulation to the students on living in their present generation and under their present advantages, an assurance that it was as satisfactory to lose a prize as to win one, and finally a desperate assertion on the part of the speaker that he, like his hearers, was a student. If he kept alive those three traditional essentials, it was not because he was quite sure that he believed in any of them, but because he would like to study them in something more than the conventional aspect. To begin with the last first, if he were a student it was clear that he was not one in the sense in which his hearers were. There was a pleasure in acquiring knowledge, and, being fond of pleasure, he sometimes still acquired it; also there was a shame in being ignorant of certain things, and from time to time he, like other seniors, tried to fill up some of the worst chasms of ignorance. In these senses a man of his age might be said to be a student. But the attitude of mind in his contemporaries and himself was entirely different from the young student's. Up to the age of 25, or perhaps 30, a man was engaged in a desperate struggle to quarry for himself a certain bulk of knowledge—if he fell below that bulk at the given age he went into life short of something that he could rarely make up in after life. He was therefore in those days of his youth under a strain of acquisition to which his elders were not subjected. And if his pleasure in the learning habit continued in after life, it was probable not that he was behindhand when the hour of his supposed full equipment struck but that he had by that time learnt enough to know how little he had by that time dug from the vast rock of available knowledge.

Again, owing to the limits of human vision, the young man's outlook on the world of capturable knowledge was entirely different from that of the older man. Young men were reasonably certain that with reasonable application they could in the allotted time be master of the allotted facts—and for all they knew the allotted facts were enough to make them perfect men—or, better still, perfect architects. For the men of the speaker's age the view was different. The horizon of unacquired knowledge was further off, the unworked quarry was deeper, and the task of gaining any completeness of knowledge was hopeless. Did that sadden them? Far from it. He thought their case was the happier of the two. In the first place it was acknowledged that there was no obligation upon any man over forty ever to learn anything, and many of them enjoyed that liberty to the full. Secondly, to those who cared to go on with the learning process, the boundlessness of unattained knowledge was not a trouble, but a pleasure. For what did it mean? It meant, surely, that the hilltop being unreachable they did not try to reach it; they were free to pick and choose among the thousand paths that encircled the mountain, or, more happily, to plunge into some of those thick coverts where as yet but few had trodden.

To put it plainly, what was a business to young men was a sport to their elders. After all, the happiest people were those who made a sport of their business, and a business of their sport; so it was difficult to say whether the younger or the elder men were the happier. But if a man's life was devoted to architecture, and if he was able to discover in it both his life's work and some of his life's sport, he would not find his life's troubles in his architecture. Did he mean that an architect's sport should be in architecture to the exclusion of physical sport? Not he! People did not always realise the necessity for "mind sport." The intellectual classes—he meant the people who earned their bread mainly by the sweat of the brain—had a way of thinking that mental exercise was work and bodily exercise play. He did not wish to linger over that disastrous error longer than to explain that there was such a thing as brain sport, and that it could be had in a great many other forms than novel reading, the drama and cards—all of which were most excellent.

So far had he been led—perhaps led astray—by discussing the theory that both they and he were students. What of the suggestion that they were to be congratulated on the postponement of their birth till the present generation of knowledge? That was an interesting problem and a pretty difficult one. The world of to-day knew a great deal more than the world of thirty years ago. They also knew that the tests of knowledge applied to young men now, in the way of examinations and competitions, were stiffer than the tests applied to their fathers. What could they deduce from that? The obvious and most simple deduction was that the educational burden on their generation was much heavier than that laid on his. If they left it at that he could hardly offer them his congratulations with anything like sincerity. But was the deduction a fair one? He did not suppose it was. Some would say that every generation was more capable of acquiring knowledge than the previous one, and that that was a symptom of the general march of civilisation from the savage to the man of supreme wisdom. He did not think that was historically true. Far be it from him to suggest that their generation was not an abler one than his. He expected it was. But there were men in the thirteenth century, the first century A.D., and the fourth and fifth B.C., with whom they dared not for a moment compare themselves. The fact was he expected that the ever-increasing burden of the bulk of available knowledge was counterbalanced by three things. One was that as knowledge grew the means of acquiring it also grew; another that a tendency to greater specialisation lessened the individual load of the learner; and the last was that, after all, the race a young man ran was not a race against the general progress of universal knowledge but a race against his contemporaries, who, being like himself receptacles of limited capacity, could not any of them contain the uncontainable. To put it more clearly by an illustration: their matches were not against "bogey" but against fellow-members of the golf club, and by alterations in the course due to those earthquakes which were called advances in knowledge "bogey" became unrelatable to first-class play, the committee saw to it that the "bogey" scores were changed.

So it stood thus, he thought—a man's chances of success by supremacy were equal in all ages; but inasmuch as it was well to have all the knowledge possible, and especially so in their own most delightful craft, he fell in with his predecessors, and said, "Happy are you in that you were born on a higher contour line than us, and happy are we who are still in sight of your beginnings of achievement on the higher slopes."

Continuing, he said, an architect must at least in his training be an all-round man. There was a real danger lest the magnitude of his task be relieved either by neglecting one side of architecture for another or by neglecting general education. Without general education an architect could neither face the problems of his craft nor the personalities of his clients or of his contractors. Gloomy as was the spectacle of an architect who neglected construction for pictorial effect, or who starved his art because he developed his knowledge of material, there was a more woeful sight still—that architect who in everything but design was a man of general ignorance.

And so he came to the last point—the consolation which the reader of an address to students offered to the unsuccessful. It could not honestly be said even by the elder who most conscientiously forgot his own youth that failure to win was anything but bitter. To they who had toiled hard and been beaten, he offered not the mockery of the suggestion that honest defeat was a pleasure in itself, but downright common sympathy. He had been in their plight many a time and he knew that it hurt. The best consolation was that which came easily to every Briton because they were a race of sportsmen. It was a comfort to them to know that they beat the world for contentment in defeat, and that without defeat there would be no victories.

The use of the word student in our country was an interesting one. The word was often applied to schoolboys and college men of all kinds. That was quite correct from the mere dictionary point of view, but it defied the common usage. It happened that in practice they almost entirely confined the word to men who after general schooling had set themselves to the acquisition of some pursuit of their own choice. In other words, the student was a volunteer, not, like the schoolboy, a conscript in the army of learning. That was rather a happy thought, and it led him to point out, in conclusion, that no one should ever be an architect except of his own free will. Fortunately, very few were.

A vote of thanks was proposed by the VICE-CHANCELLOR OF CAMBRIDGE UNIVERSITY, who, in addition to thanking the President for his eloquent address, said he also came to pay a tribute to the Institute for its interest in the School of Architecture at the University of Cambridge. That school was a very lusty bantling, of which Professor Beresford Pite had much to do with bringing into the world. At Cambridge they were trying to do what they could to give education in architecture, which he hoped would not be vocational. He was against vocational training, and imagined that for an architectural school it was of the utmost importance for the students not only to design

buildings, but also to know a good deal about men, which the life at a university gave one.

The vote was seconded by MR. E. P. WARREN, and passed with acclamation.

Review of Competition Designs.

MR. D. THEODORE FYFE then reviewed the designs submitted in the various competitions, and hung upon the walls. In the course of his remarks he said the sight of a great exhibition of pictures had the effect of recreating the eye, and through the eye the whole being, so that quite ordinary things and persons were not what they seemed before, but had a fresh and new complexion.

In commenting on the works submitted for the Essay Prize, he said he thought they indicated that the spirit of research was not quite so profound as it might be. There were many subjects awaiting good treatment, such as the facts of any traditional English building form in a particular district, the treatment of features and accessories (such as spires, lead-work, cast-iron work, wrought iron work, grates, floor tiles, &c.), things in which the writer could not only benefit others but also learn a great deal for himself by actual drawing and handling.

The Pugin Studentship had no entrants, and he was afraid that was significant that the study of mediæval work was on the wane. He could not help feeling that though mediæval forms might not constitute a spoken word in building to-day, their study to the architect was as valuable as that of Greek to the educated man, and, further, there was perhaps a misunderstanding of the term "mediæval" among students. If it were borne in mind that mediæval included everything, great or small, in this country after Roman work up to and including the reign of Elizabeth, it must include the basis of all our domestic work, and its study was not only advisable but absolutely necessary for the proper education of architects. Let the student ponder that, and spend his next holiday in running around a given area to see what he could pick up.

Three designs had been sent in for the Soane Medallion, but that rather unsatisfactory result might be due in part to the unmanageable nature of the scheme on paper. He thought it would be a good thing if the Committee that set the design subjects for prizes each year would arrange for one of its members to work out the context of the subject on paper, or in any case satisfy itself that drawings of larger size than "antiquarian" were not required. The moral to students of this year's Soane design must be that it was inadvisable to design a large scheme without setting it out fully; the whole must be visualised and drawn out to a uniform small scale before any enlarging were attempted.

There were only four entrants for the Grissell Medal, and it was not awarded. The subject was "A Mooring Mast for an Airship in Connection with an Hotel," but owing to a misunderstanding one essential condition of a proper air mast—that there should be no buildings immediately around its base—was not part of the conditions. One of the designs submitted was purely steel-work, and it led one to think that possibly every alternate year the Committee might permit a competitor to collaborate with an engineer in the production of a design, as that might usefully promote mutual co-operation and good-fellowship between the two professions.

A vote of thanks to Mr. Fyfe was moved from the chair, and heartily accorded.

The prizes and awards were then handed to the winners by the PRESIDENT. (A full list of the prize-winners was given in our issue for January 27.)

The Royal Gold Medal.

The PRESIDENT announced that the Council of the Institute proposed to submit to H.M. the King the name of Mr. Thomas Hastings, of New York, as a fit recipient of the Royal Gold Medal for 1922.

UNIFICATION AND REGISTRATION.

Meeting of the Committee.

A meeting of the Unification and Registration Committee was held at No. 9, Conduit-street, W.1, on Tuesday afternoon, the PRESIDENT (MR. PAUL WATERHOUSE) in the chair.

THE PRESIDENT explained that the meeting had been called because the general meeting called for that night had brought the whole subject of unification and registration directly before the general body of the Institute, and it had occurred to him that the members of the Committee might like an opportunity of seeing one another before that general meeting.

MR. ARTHUR KEEN (Honorary Secretary) then gave a brief historical survey of the unification movement. The Committee, he said, had practically unanimously adopted Scheme "A," which provided for unification by bringing all architects of the country into membership of one or another of the classes of the Institute. The scheme was referred to the Associates, who appointed a committee which was still engaged in collecting the views of the Associates throughout the country, and had not yet reported. The Associates' Committee, however, seemed to be taking a broad and sound view of the whole matter, and the proposals it was making seemed to be very well considered. The Licentiates also appointed a committee to consider the matter, which recently informed him that, in view of the opposition in the Press against the scheme, it thought it desirable that the Sub-Committee of the Unification Committee should be brought together to consider the matter. The next thing that happened was the requisition from certain members for a general meeting to consider the question. That meeting was to be held that evening. He thought it would be wise if the Unification Committee re-affirmed the resolution it took on May 12, 1921, so that there might be no uncertainty that it still held the same views, and he moved:

> "That this meeting of the Unification and Registration Committee re-affirms its resolution of May 12, 1921, that the principle of Scheme 'A,' namely, the bringing of all architects of the United Kingdom into membership of the R.I.B.A., be adopted as the basis of unification."

MR. SYDNEY PERKS said he thought that, as the resolution had already been passed and acted upon, there was no need to re-affirm it. He raised this as a point of order, and the President ruled that the resolution was in order.

MR. J. E. YERBURY said he thought it was very necessary to re-affirm the previous resolution. A general meeting had been called to discuss the question, and it must be made clear to the members that the Committee was set up to carry out a certain policy. If those who had called the meeting had another policy they wished to have carried out it was their duty to present their proposals to the Unification Committee. Some people said that unification could only be obtained through registration, but he saw no argument in favour of that at all. A disunited profession could never attain anything; if the members of the Institute were going to quibble about every little thing that turned up with which they did not agree nothing would ever be agreed upon—neither unification, registration, nor anything else. His Committee (the Licentiates' Committee) was of the opinion, having regard to the fact that a committee representative of all sections of the profession had been appointed to consider and report on all questions connected with unification and registration, that a motion might be put from the chair at the general meeting to the effect that public discussion should be deprecated and suggestions and proposals should be sent to the Unification Committee for consideration. If general meetings were continually to be called to discuss various points that might arise, the proposals would never get any further.

MR. H. T. BUCKLAND supported Mr. Yerbury's remarks, and said it seemed most essential that they should have Mr. Keen's resolution re-affirming what had been done by the Committee in view of the fact that the small committee headed by Mr. Perks and his friends had consistently attempted to misinterpret the terms of the resolution of May 12, 1921.

MAJOR H. C. CORLETTE also supported the motion and appealed to those who had been writing to the Press demanding various things to show that *esprit de corps* which in their resolution they asked the general meeting to exhibit; they were all out for *esprit de corps*.

The motion (which was seconded by Mr. H. R. Taylor) was put to the meeting and carried, only Mr. Perks dissenting.

The HONORARY SECRETARY then announced that, as he was no longer President of the Society of Architects, Sir Charles Ruthen had tendered his resignation as Vice-Chairman of the Unification and Registration Committee. This was accepted, and the meeting terminated.

THE GENERAL MEETING.

Following the meeting of the Unification and Registration Committee, a very largely attended general meeting (many members standing) was held in accordance with the following requisition:—

"To the Council of the R.I.B.A.—We beg to ask that a special general meeting may be called in accordance with our Charter and By-law No. 65, when the following resolution will be moved:—

> 'This meeting is of opinion that the conditions for the unification of the profession should form part of a Registration Bill, and that the present system of admittance to the Institute, including compulsory examination, should continue in force until a Registration Bill be passed.'"

The requisition was signed by Messrs. A. W. S. Cross, H. D. Searles Wood, George Hubbard, Sydney Perks, Albert W. Moore, Heaton Comyn, Leonard A. Culliford, Fredk. R. Hiorns, H. G. Fisher, Digby L. Solomon, R. Burns Dick, J. T. Cackett, Chas. B. Flockton, Henry Tanner, Percival M. Fraser, H. H. Golding, Fredk. J. Stevens, F. R. Milburn, W. T. Jones, W. Milburn, G. E. Charlwood, G. H. Gray, Sidney F. Bastow, H. L. Hicks, and John White.

The resolution was moved by MR. A. W. S. CROSS, who said that in doing so he ventured to express the hope that some definite issue would result from the meeting. He might as well speak frankly. They knew there was a great difference of opinion on the subject of unification. The longer they let this thing lie dormant the more chance there was of arousing bitter feelings amongst their members. If they let it go on and simply waged outside warfare it would go from bad to worse. He would accordingly move:—

> "That this meeting is of opinion that the conditions for the unification of the profession should form part of a Registration Bill, and that the present system of admittance to the Institute, including compulsory examination, should continue in force until a Registration Bill is passed."

He did not propose to address them at great length for various reasons, especially as there were present many provincial members. They would wish to hear them, for there was no doubt there was very strong opposition to the proposals of the Council in various parts of the country. For the reasons he had stated he had no hesitation in appealing to the members present to accept the motion. Continuation of the present state of affairs was likely to cause a spirit of bitterness between the members of the Institute and to react disastrously upon the Institute itself. A *modus vivendi* must be found. The Unification and Registration Committee of the Institute had moved four resolutions which were subsequently accepted by the Council. They were concerned with but one of these at present—

"that the principle of a scheme for bringing all architects of the United Kingdom into membership of the R.I.B.A. be adopted as a basis of unification." In spite of the efforts of Mr. Keen to prove that black was white and white was black, he was still convinced that the scheme to bring all the architects of the United Kingdom into the Institute was not a good one. Could not all the architects be brought into the R.I.B.A. by examination? None of them wanted to increase their membership by scheme "A." Examination was the only method, and that disputed clause must be re-drafted. The Institute must stand in exactly the same position as regarded outside architects as it stood to-day. A close scrutiny of the late Council's scheme was desirable; it seemed that one of its main objects was the absorption of the Society of Architects and the qualification of the "quack" architect who belonged to no association at all. If they were shown that benefit would result, most architects would be prepared to make a sacrifice. But the Surveyors' Institution had dropped its Registration Bill. If the R.I.B.A. did not succeed in obtaining Parliamentary sanction to registration the sacrifice would have been in vain. By the adoption of this scheme to admit all architects without examination the prestige of the Institute would be diminished rather than increased. The members of the late Council should have borne in mind that while they were entrusted with a little brief authority they were trusted for the time being with the welfare of a great Institute, and it was their duty to refrain from gambling with the future of the Institute. Surely, in the full light of past experience of unsuccessful Bills to deal with the matter of registration, they should not have agreed without earnest discussion. Registration seemed likely to be possible only in the dim and distant future.

MR. GEORGE HUBBARD seconded the motion, and prefaced his remarks by saying that he would like it to be clearly understood that there was no ill-feeling between the R.I.B.A. Defence League and the Associates' Committee, and the Defence League was not in opposition to the Associates' Committee. Continuing, he said there could be no mistaking the words of the resolution passed on May 12, 1921, as to "bringing all architects of the United Kingdom into the Institute." But did they fully realise what that meant in effect? No suggestion had been made as to any test or examination—the Institute was to be opened to architects without any qualification, and the object, if they pleased, was in the hope that the Institute might be able to speak as one man and thus have a better chance of obtaining an Act of Parliament by which architects should become registered. In 1908 Mr. Cross and himself toured the country on the question of unification, and got some 1,100 Licentiates to join the Institute. In its way that was a unification scheme, and had behind it the hope of obtaining an Act of Parliament, but it did not bring them one inch nearer that result. The only chance of having an Act of Parliament and getting statutory powers was by showing that it would be in the interests of the public. But Parliament had already protected the public by the building by-laws, District Surveyors, and Sanitary Inspectors, and Parliament did not care about the taste or style of buildings. They were all in favour of registration, but it seemed to him that they were going in the wrong direction to get it. The point that should be concentrated on in the first place was a Registration Bill, and if a Bill were got through Parliament they would necessarily get unification; but it should be Bill first and unification afterwards. There was a certain class of architects outside the Institute who had good practices, and whom nothing on earth would induce to join the Institute. As a free-lance, an architect of that class could do very much better. During the past twelve months he (the speaker) had lost a quarter of a million pounds' worth of work to the outside architect. But the outside architect could not be got into the Institute by unification; he would always remain a thorn in its side. Unification meant that the doors of the Institute had to be opened to embrace all architects: would not the prestige of the Institute be lowered by that proceeding? Undoubtedly it would. At present there was an honour in being a member of the Institute, but to allow every man to come in would result in that honour disappearing. The effect would be that many members would throw up the Institute; they would resign if the present proposals were carried through. The Defence League had received hundreds of letters against the proposals, one of which proposed that the whole of the Associates in the Defence League should resign *en masse* as a protest, and form a new body, called the "Association of Qualified Architects." That showed the spirit held by a great number of Associates.

The HONORARY SECRETARY then read the resolution passed earlier in the afternoon by the Unification and Registration Committee, as given above.

He also read the following resolutions on the question received from Allied Societies:—

From the Associates' Committee (*Resolution carried on February 2, 1922*).—"That in the opinion of the Associates' Committee, if the resolution on the agenda paper at the special general meeting called for Tuesday next, February 7, is carried, the unification of the profession will be indefinitely postponed." The Committee has ample evidence that, although there are differences of opinion as to details, the great majority of Associates are in favour of unification whether or not registration is immediately obtained.

From a meeting of Associates held in Liverpool in October, 1921.—"That this meeting of Associates resident in Liverpool and district is agreed that unification is an indispensable pre-requisite to registration by Act of Parliament, and would urge that every effort be made to secure the unification of the profession."

From a meeting of Associates held in Manchester, October, 1921.—"This meeting having considered the point of view expressed by certain members who are opposing the scheme, namely, 'that if registration by Act of Parliament does not materialise for some time the present suggestion of unification is a false step' is agreed that unification, apart from any details at present proposed, is an essential preliminary, and is prepared to support the same for the advantages which it would bring."

From a meeting of Associates held in Newcastle, November, 1921.—"That this meeting of Associates resident in Newcastle and District is agreed that unification is an indispensable pre-requisite to registration by Act of Parliament, and would urge that every effort be made to secure the unification of the profession."

MR. H. T. BUCKLAND said he would like to ask what would be the result of the resolution moved by Mr. Cross if it were passed. He thought the reply could be found in the first clause of the resolution to which it took objection, namely, that it would involve the bringing of all architects of the United Kingdom into membership of the R.I.B.A. or a kindred association. If they felt sure that the Registration Bill could not go through at the present time (and they did feel sure it could not), what possible objection could there be to preparing the way in the best possible manner to get a Registration Bill through when the time arrived? In his remarks, Mr. Cross had not associated resolution No. 1 with the remainder of the resolutions to which he took exception. Resolution No. 3 said that the Committee recommended the R.I.B.A. to draft such alterations to its Charter and By-laws as might be necessary to comply with Scheme "A" and to confer with the Society of Architects as to the conditions of membership. He thought that the action of the Defence League in promoting a campaign directly opposed to the Council of the Institute and the Unification Committee, when it knew the declared policy of those bodies was in favour of unification, was not cricket. If they wished to promote such a campaign the members of the Defence League should certainly have retired from the positions some of them held on the Council of the Institute. What they had persistently done had been to misrepresent what the objects of the Unification Committee were. If they had considered the third resolution he thought they would have found the answer to their arguments. Neither the present meeting nor the Institute had any definite proposals before it as to what outside architects were to be invited to come into the Institute, and without such proposals be thought the Defence League was attempting to prejudge the issue. He moved an amendment, as follows:—

> "That a committee which represents all sections of the profession having been appointed to consider and report upon all questions connected with the unification and registration of architects, this meeting deprecates the public discussion of various views until the report of the Unification and Registration Committee has been presented, and considers that all suggestions and proposals for carrying out the expressed wishes of the profession should be sent to the Unification Committee for consideration."

If they passed the resolution moved by Mr. Cross, they would kill the possibilities of unification, and all the excellent work that had been done in that direction would be wasted. They all wanted to act as one body, and if the outside architects were such terrible men, it would certainly be better for everyone if they were brought into the Institute, when they could be controlled.

MR. HERBERT A. WELCH seconded the amendment.

Before he spoke upon it, the PRESIDENT, answering several questions from the body of the meeting, said there was nothing in the amendment to which he could apply an adverse ruling.

MR. WELCH said he felt that at the present moment anything which would postpone a decision on this matter which was against the professed policy of the Institute, was desirable. Either those members of the Institute behind the resolution were unaware and acted in ignorance of the facts, or they could not appreciate the effects of the proposal. As he knew these members well he had no doubt as to their sincerity, and it must be that they were not fully conversant with the subject. The question of unification and registration had been before the general body for a very long time. He himself had known it for the past 15 or 20 years. The last proposals of the kind failed because they were unsatisfactory to the profession. But the general body had given its sanction to a scheme for unity, to be worked out by the members of the Committee. This scheme had not yet been accepted, and the issue should not be prejudged. If they proceeded on such lines their decision would not be worth anything at all. The proposer of the motion said that this scheme was to give life to a proposal which was lying dormant. Why lying dormant? So long ago as last May it was mentioned in the architectural Press, and therefore every member in the room should be conversant with it. They had agreed to the principle of unification as such, and there had been no dissentient voice until a "red herring" had recently been drawn across the trail. It had just been stated that the matter was dormant. Nothing of the kind! The proposals going forward were receiving the gravest consideration of the Committee. The proposals were not dormant, but the effect of the resolution would be to make them so. Again, he said, "Do not prejudge the issue, but wait until the proposals are in a concrete form and then, in the sound British way, get up and say they do not please." If they were going to prejudge proposals they would never get a body of men to give up their time indefinitely to work out proposals which were to be prejudged and with which the general body would have nothing to do. He had been in Bristol and South Wales to acquaint the Associates with the proposals. There was a great deal of opposition to these proposals; but so there was to any new thing—one could not please everybody. Unification was too big a thing to obtain easily, and they should not prejudge the matter. Directly a scheme was put forward on constructive lines a resolution on destructive lines was put forward to throw it out. They were told among other things that if they adopted a scheme for unifi-

cation that was going to bring into the Institute a lot of unregistered people, they were going seriously to injure the R.I.B.A. Yet they were told that if there was registration before unification all would be well. What about the prestige of the Institute in that case? He could not understand it—they were going to bring in exactly the same people. He thought good would result from the merging of the various bodies in the R.I.B.A. Directly they got unification, the title of "M.S.A." would automatically become defunct, and practically 75 per cent. of the men who were practising architects were going to have "something" R.I.B.A. after their name. How would that affect the prestige of the R.I.B.A.? The esteem of the public would be increased rather than decreased. The public esteem was gained solely by the amount of architecture one spoke at it, and he failed to see how the R.I.B.A. was going to be lowered in prestige. He was sorry to hear talk of resignations if the Committee's proposals were adopted. Such action would be childish. He desired to associate his name with anything which would defer a decision on this matter until the profession was in possession of enough detail on which to form a definite opinion.

MR. WILLIAM WOOLWARD said this was a subject for sincere and careful consideration by the profession. If these proposals of the Council were adopted, they would, in his opinion, absolutely lower the dignity and status of the architectural profession. Why? Because the word "all" was inserted in the proposals in question. This would let in men who called themselves architects without the slightest reason for so doing. The Council's proposals were alliteratively "bare, bald, and bold." No undertaking had been given by the Council as to the qualifications which it was proposed to require for admittance of these men into the general body. Would the members have the power to blackball, and would the names of the candidates for election come before them in the ordinary way? As regarded such matters the members were left in complete darkness. His point was that, if the Council's suggestions were adopted, it would distinctly lower the prestige of the Institute. After registration, by all means bring them all in—but not before. The whole of the members of the Society of Architects could, of course, be admitted without further question; no Bill was wanted for that.

MR. SYDNEY PERKS said, as to the resolution he had inquired in the office as to the support it had received by letter, and found there were 170 members who approved it and none against, which was significant. He was sorry to have to say anything about the Associates' Committee. That Committee said it had ample evidence that, though there was a difference of opinion, the great majority of the Associates were in favour of unification. He could not credit that this was so. It seemed that of 2,140 Associates there were 1,070 who were pledged to unification, whether registration were obtained or not. He criticised the reports from Liverpool, Manchester and Newcastle, and set out to show that the supposed majority was not so definite as it might seem. There were, however, 350 to 400 men who had intimated their support of the proposals, but were against Scheme "A." If it were desired to alter the constitution of the Institute a good reason should be given for it. They were told that, if men were admitted wholesale, or partly wholesale, they were going to get registration—but there was no evidence that it would be so. Two or three years ago the Surveyors' Institution and the Institution of Civil Engineers had both agreed that registration was highly desirable, but practically impossible to attain. To obtain registration a public case must be made out, and in their case the public interest was entirely looked after by the Building Acts and other legislation. This was nothing new. Sir Reginald Blomfield and Sir Aston Webb told them years ago that they could not get registration. The present Council had not passed any resolution on this subject at all. It simply took over a legacy from the previous Council. He could not see why the new Council should back this legacy. *Esprit de corps* was all very well, but there was something finer, which was to do one's duty. They were told to make a sacrifice; he did not mind if he was going to get something for it, but he was getting nothing. As to progress, this proposal was taking them back thirty years or so, before the Entrance Examination was made compulsory. The Institute had been built upon examination; any lowering of the standard was going to damage the Institute. No scheme had ever been put forward that suggested disruption and dissension so much as this. The Americans had a scheme for unification, but they were not so slow as to admit men before registration. Examination was the foundation of the unique position which the R.I.B.A. held to-day, and if they weakened on that they would spoil its value. They must be warned against being "side-tracked," which would be the effect of passing this amendment. On a subject such as this, every member should be given the opportunity to vote. He asked them to vote down the amendment and to maintain the status of the Institute by examination.

MR. HERBERT WELCH said the great majority of Associates were in favour of unification, whether or not registration were obtained. That had been challenged by Mr. Perks, but votes had been taken at many meetings of Associates which had shown it to be the case.

MR. FRANK WOOLWARD said outside architects would have to be admitted, either by examination or without examination, and that involved the question of those young men who were to come into the profession in the future. The Institute would then have to decide whether it would admit them or not, and it seemed there would be no end to that sort of thing without registration. He was agreeable to all architects being admitted to the Institute if registration were in force. In time the outside architects would die out, and everyone inside the Institute would have a diploma and those admitted afterwards would have to undergo an examination. If examinations were made less strict than those now in force it would mean that there would be no incentive for the student to attain a high standard. The standard of the examination might be so reduced that the prestige of the Institute would disappear. If registration were not possible, he felt unification would lead very far from the goal they wished to reach.

In reply to a question, the PRESIDENT said he thought if the resolution were passed it would stop the whole progress of the unification movement.

MR. WHITE said he thought members should realise the enormous amount of work put into the unification question. He could look back twenty years and recall the same stock arguments which had been used that night brought forward against unification.

MR. GILBERT FRASER (President, Liverpool Architectural Society) said he would be sorry to have to go back to Liverpool and say the Institute had entirely changed its policy on the question of unification and registration. He was against the resolution.

MR. G. C. LAWRENCE (President, Bristol Society of Architects) supported the amendment. If this resolution were passed the work of the Committee was ended. All he desired was to ask them if they could not find some means to make architects a united body and greater than they were at present.

MR. C. B. FLOCKTON (President, Sheffield, South Yorks, and District Society of Architects) said it all seemed to turn on the question of whether the acceptance of the new members should take place before or after registration. It appeared to him that there should be some way of overcoming the difficulty. They were all in favour of unification and registration, if they could get it. He felt very strongly that they were being asked to admit everybody to the membership of the Institute, without knowing whether there was any finality to it. They were not assured that it might not happen again after a few years. He suggested that this scheme of admittance to the Institute should not come into force until a method was found of registering architects.

A PROVINCIAL ASSOCIATE (who did not give his name) said he did not know anytl ing of the politics of the Institute. He had not quarrelled with the Unification Committee, but could not see that the passing of this resolution would interfere with its labours in any way. In the provinces they were up against competition by unqualified men who, nevertheless, were looked on by the public as architects. The scheme distinctly included "all architects." He felt the Associates' class would be most affected by the resolution. In his own town there was an office window of a rival which proclaimed him an "architect, surveyor, house agent and coal merchant." Was that kind of man going to be admitted as an Associate of the R.I.B.A.? Who were to be admitted? He did not see why the question should be side-tracked, or why they should wait for six months and then be asked to vote again. He supported the resolution.

Another PROVINCIAL ASSOCIATE who did not give his name, speaking of competition, said the London members only had to fear the competition of the worthy rival and men accustomed to do big work. The previous speaker had referred to the type of man who was bound, it seemed, whether the members liked it or not, to be taken into the Institute. He had heard no assurance that the Registration Bill was to come into effect ten, twenty or fifty years hence. The dentists had got a Bill through, but it was an Act through which one could drive a cart and horses. The most similar case to their own was probably that of the chartered accountants. Roughly 90 per cent. of accountants belonged to it, yet even they, whose business touched the Parliamentary pocket, had been unable to get a Registration Bill through, though they sent it up at regular intervals. If that was so with the accountants, what hope was there for an architects' Bill? He looked at Mr. Buckland's amendment as a "red herring" drawn across the trail; there was danger in the amendment of the whole matter getting shelved. The case should be placed on paper and made the subject of a referendum. The decision come to at that meeting should not be treated as final. He was strongly adverse to receiving everyone into the Institute without prior registration.

MR. A. W. HENNINGS (President, Manchester Society Architects) said every member of the Manchester Society was circularised and hence if the meeting was small Manchester members had no right to complain about it or the decision at which it arrived. He agreed with the remarks of Mr. Lawrence as to the work of the Associates' Committee, and supported the amendment.

SIR BANISTER FLETCHER urged a straight vote should be taken on the resolution. He claimed that there was really nothing before the meeting at all. The Council had this matter in hand, and when the time was ripe would call a general meeting to consider it. He was surprised to find members there putting forward the resolution. He asked his professional brethren to think well before they damned the work of their Council. If the resolution were passed no member, of course, could go on with the matter. Every member of the R.I.B.A. should have a vote on the question—by post if necessary. They must thank the Associates; who had done remarkable public work in supporting, up to a certain point, the work which had been carried out.

MR. E. P. WARREN said he had only one point to make. If the scheme for unification was carried under a Bill which later became an Act, it was then fixed, and the many minor amendments which were found necessary in schemes of this kind could not be made, except by an amending Act, which was cumbrous and expensive.

MR. F. R. HIORNS said what they strongly objected to was that all the architects of the United Kingdom should be brought into the Institute. The opposition was directed against a policy of that sort unless ultimately there were passed a Registration Bill. The Institute repre-

sented a very great tradition. If they went back 80 years they would find that architects at that time passed a resolution to uphold the character and maintain the status of architects. Since that time the architects in charge of that Institute had worked for the good of the Institute and the maintenance of the standard. Forty years since the examination was introduced, and the standard of the examination was a difficult one and calculated to ensure respect for the Institute as a whole. This proposal was a retrograde step, and he hoped they would do nothing in the direction proposed except after the passing of a Registration Bill.

THE PRESIDENT said it had been his intention to say nothing at this meeting in connection with the subject of the discussion. Before the meeting ended, however, he felt he would like the members to know what was in his mind. He suggested that the breath of reason was in the direction of accepting the amendment. Most of those who moved the resolution there had been really fighting against the unborn. He thought the Institute as a whole was not yet ready to declare its mind on the subject of the discussion.

The Voting.

The amendment was then put, with the following result:

For the Amendment	80
Against	118

Voting then proceeded on the original motion with the following result:

For the Motion	112
Against	66

The proceedings closed with an expression of thanks to the President by MR. WOODWARD, this being agreed by acclamation.

[As under the by-laws of the Institute the resolution was not voted for by the necessary majority, it is therefore not carried.]

Notes from the Minutes.

The following notes are from the minutes of the last meeting of the Council of the R.I.B.A.

HIGHER BUILDINGS.—It was decided that the question of higher buildings should be discussed at the general meeting on March 6.

The London Building Acts Committee was thanked for its services and discharged.

THE VICTORIA AND ALBERT MUSEUM.—It was decided to urge the authorities of the Victoria and Albert Museum to return to the hours of opening in force before the war.

EXHIBITION OF BRITISH ARCHITECTURE IN PARIS.—The Council decided to undertake the financial responsibility for the Exhibition of British Architecture at the Paris Salon in the summer of 1922.

ARCHITECTS' AND SURVEYORS' ASSISTANTS' UNEMPLOYMENT INSURANCE.—A sum of £25 was voted to meet the expenses of preparing the scheme for an Unemployment Insurance Society.

The Final Examination.

The problems in design submitted by candidates for the Final Examination and the Special War Examination of the R.I.B.A. will be on exhibition in the galleries of the R.I.B.A. from February 10 to February 17, between the hours of 10 a.m. and 5 p.m.

YORK AND EAST YORKSHIRE ARCHITECTURAL SOCIETY.

ANNUAL DINNER.

THE dinner of the York and East Yorkshire Architectural Society was held at the Royal Station Hotel, York, on February 2. Amongst the large company present were the Lord Mayor (Alderman W. H. Birch), Mr. Paul Waterhouse (President, Royal Institute of British Architects), Mr. A. E. Munby (President, York Society), Mr. Ian MacAlister (Secretary, R.I.B.A.), Mr. Stephen Wilkinson (Vice-President), Mr. J. M. Dossor (Vice-President), Mr. E. A. Pollard (Hon. Treasurer), Mr. J. E. Reid (Hon. Secretary), Messrs. J. Ferguson, S. R. Kirby, George Benson, A. B. Burleigh, S. Needham, W. E. Parkinson, T. Snowden, A. G. Stevenson, S. G. Highmoor, A. Cowman, F. Dyer, F. T. Penty, Kenneth Ward, J. Vause, R. Jackson and Leckenby.

At the conclusion of the dinner, MR. J. M. DOSSOR (Hull), in proposing success to the Royal Institute of British Architects, said the real aim of the Institute was to co-operate the whole of the profession into a homogeneous body, so that the younger members would uphold the profession in the esteem of the general public.

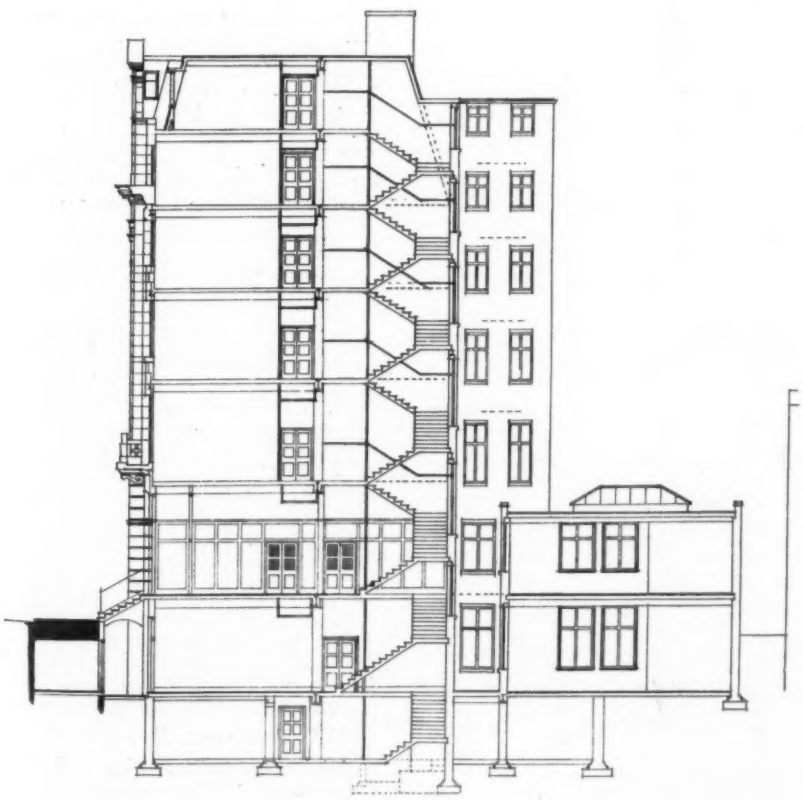
MR. PAUL WATERHOUSE, in returning thanks on behalf of the Institute, opened his remarks with a reference to the late Ernest Newton, whose death had left a conspicuous blank in his life. Continuing, he referred to the growing unity between the Institute and the provincial societies. London was the centre of a circle represented by the allied societies, and the circle was beginning to take the form of a sphere with outposts all over the globe. He paid a cordial tribute to Mr. Munby, whose link with the York Society he greatly valued. He emphasised the fact that the touch that the Institute had with the non-Metropolitan societies was a true touch. The Institute always welcomed suggestions from provincial societies. The question of unification, instead of being as many thought the inspiration of a few London faddists, was in reality the outcome of a provincial feeling. The allied societies had helped the Institute in the solution of many problems. In concluding, he referred to the old-time pupilage system, when the only training a pupil received was in the office of an architect. That had its good points. Architectural education had now been organised, and this tempered with the pupilage system was a valuable asset. Architectural schools had stimulated many youths to study for the profession. He was afraid, however, that all would not be able to get employment. Nevertheless, he did not advocate any lessening of the system, but masters of such schools should not be led away by a number of successes. The real test was when a pupil had to find his own level. He admired the conscientious master who told parents whether their sons could go on or not.

MR. MACALISTER proposed the health of the Allied Societies, and said he had been for fourteen years Secretary of the Institute, and this was the first occasion on which he had been entertained by an allied society. He congratulated the York Society on its choice of President and dwelt upon Mr. Munby's knowledge and wide experience. There were forty professional societies allied to the R.I.B.A., twenty-five of these being in the United Kingdom. The Institute allowed perfect local freedom in its allied societies, and was always ready to listen to advice from them, and was doing all it could to establish intercommunication between each.

MR. MUNBY, in replying, said his people had long been associated with the public work in York. In reference to architectural education, he would like that to be as broad as possible. A student should be able to tackle all problems, from designing an altar cloth to conducting an arbitration. The York Society greatly appreciated the work of the Institute and its Secretary.

MR. STEPHEN WILKINSON proposed the health of the Lord Mayor, and said he would like to have seen more visitors at the dinner, because many people were so ignorant of architecture that they did not know what was the function of an architect.

The LORD MAYOR, in replying, said he had accepted the invitation with a certain amount of trepidation, because he was a builder. In the old times, a workman was left with more individual liberty than at present, and much work was left to his initiative. He felt that such conditions could not appertain to-day. Contrasted with those times, workmen now showed less interest in much of the intricate work with which they had to deal. Architecture was a creative art, but it was almost impossible for an architect to-day to do his best—he was hampered by conditions. It was up to the architect particularly to make our streets beautiful, and if he had more freedom and less financial restrictions to contend with he would rise better to the occasion.



New Offices for the Gt. Northern Telegraph Co., Ltd.
MR. HENRY A. SAUL, F.R.I.B.A., Architect. (*See p.* 226.)

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ILLUSTRATIONS.

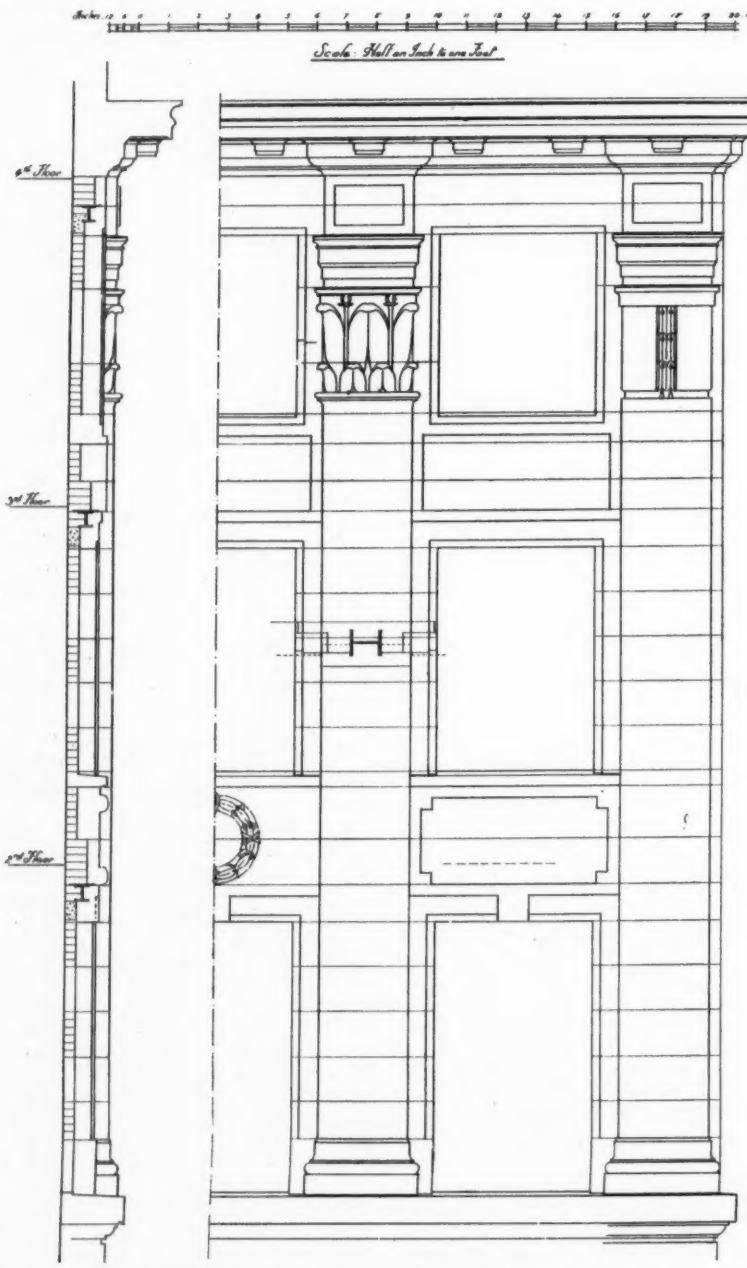
The Great Northern Telegraph Co.'s Offices.

This building is to be erected for the Great Northern Telegraph Co., Ltd., on the site of Nos. 6 to 11, St. Helen's-place, E.C. 3, to the design of Mr. H. A. Saul, F.R.I.B.A. The houses now being demolished are of the stolid and severe type associated with the late eighteenth and early nineteenth centuries, and are among the last of the old residential buildings within the City boundaries. They were erected in 1805 for the convenience of City merchants, who at that time lived on the spot, and the large kitchens and wine cellars are reminders of the prosperity of citizens in those days.

The new building is to contain eight floors, including the basement and sub-basement, and to consist of a steel skeleton faced in front with Portland stone and at the back with white glazed brick, the floors being of reinforced concrete between steel joists, and the main roof being treated as an asphalte flat. The lower floors are to be partitioned off for their several uses, but the upper floors are to be left undivided for the purposes of letting and subsequent partitioning. The elevation has been designed to harmonise and to line up with a part of St. Helen's-place that was rebuilt in 1913, of which it will form a continuation.

It is interesting to note that the building is provided with no fireplaces, and only possesses four flues—a welcome sign of the movement now directed towards reducing air pollution; the four flues are connected with four boilers, three of which operate a low-pressure hot-water central-heating system; while the fourth serves the domestic hot-water supply. As regards ventilation, the exhausted air escapes from the offices into ducts running over the main passages, as shown in the section, and it is then delivered into vertical shafts at each end, which deliver into the open at roof level; the shafts are fitted with electric fans to induce a draught when the natural upward current is insufficient. Electric lifts are fitted in the angle of the stairway at each end, the gear being placed in small chambers on the roof; these chambers, being at the back, have not been shown on the front elevation.

The Leathersellers' Company, to whom the site belongs, and who have been connected with this area since the fourteenth century, have consistently resisted any temptation to demolish part of St. Helen's Church, which bounds the site at the back.



New Offices for the Gt. Northern Telegraph Co., Ltd.
MR. HENRY A. SAUL, F.R.I.B.A., Architect.

Watford Peace Memorial Competition.

We illustrate this week the second premiated design in the Watford Peace Memorial Hospital Competition, by Mr. Alan E. Munby, F.R.I.B.A. The first premiated design, by Mr. Wallace Marchment, Lic.R.I.B.A., was illustrated in our issues for December 9 and 23, 1921; a review of the designs was given in the latter issue.

This design gives a main frontage to the public road, but well set back. The administrative rooms are near the central entrance, and on each side are the electrical and casualty blocks, approachable from the main corridor and also externally from the front in order to be well under control and readily accessible by the public. On the right is the surgical wing for both sexes, with services in common, and centrally situated on the axis of the main corridor is the operating block. On the left is the medical wing, similar to the foregoing in general arrangement. Beyond the central octagon hall is the kitchen block, containing also the dining-rooms and servants' quarters over at the rear, while over the administrative rooms are quarters for the matron and houseman. The nurses' home, laundry and power house, and the mortuary block are detached buildings beyond the kitchens. Proposed extensions to complete the scheme for 100 beds are shown as first-floor additions distinguished by the walls not being blacked in. The elevations of the ward blocks both for the one- and two-story scheme are shown below the first-floor plan.

Cunard Building, New York.

We give this week some interior views of the Cunard Building, New York, for which Mr. B. W. Morris is the architect, and Messrs. Carrère & Hastings the consulting architects. The Council of the R.I.B.A. proposes to submit the name of Mr. Thomas Hastings, of Messrs. Carrère & Hastings, to the King as a fit recipient of the Royal Gold Medal in Architecture for 1922.

MEETINGS.

FRIDAY, *February* 10.

Manchester Society of Architects.—Professor B. Brown on "Work of Mediæval Builders." At St. Mary's Parsonage. 6.15 p.m.

Town-Planning Institute.—Mr. J. P. Orr on "Zoning Investigations in London." 6 p.m.

College of Estate Management.—Mr. S. A. Smith on "Valuations." At 35, Lincoln's Inn-fields, W. C. 2. 5.30 p.m.

WEDNESDAY, *February* 15.

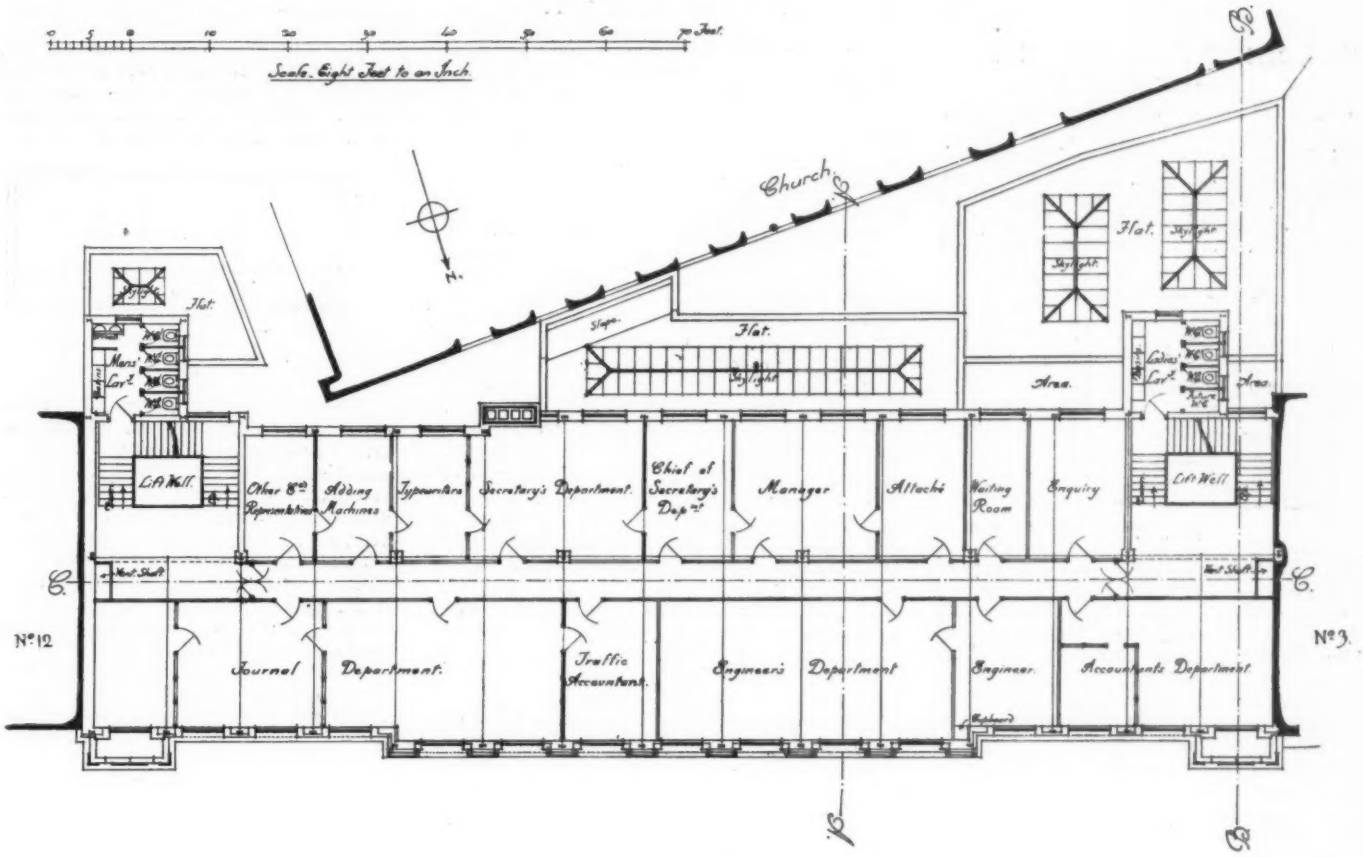
L.C.C. Central School of Arts and Crafts.—Sir Banister Fletcher on "English Mediæval Architecture: Monasteries, Cathedrals, Churches." At Southampton-row, W.C.1. 6 p.m.

University College Lectures.—Mr. Martin S. Briggs on "Historical Building Construction: Carpentry." At University College, 6.1.5 p.m

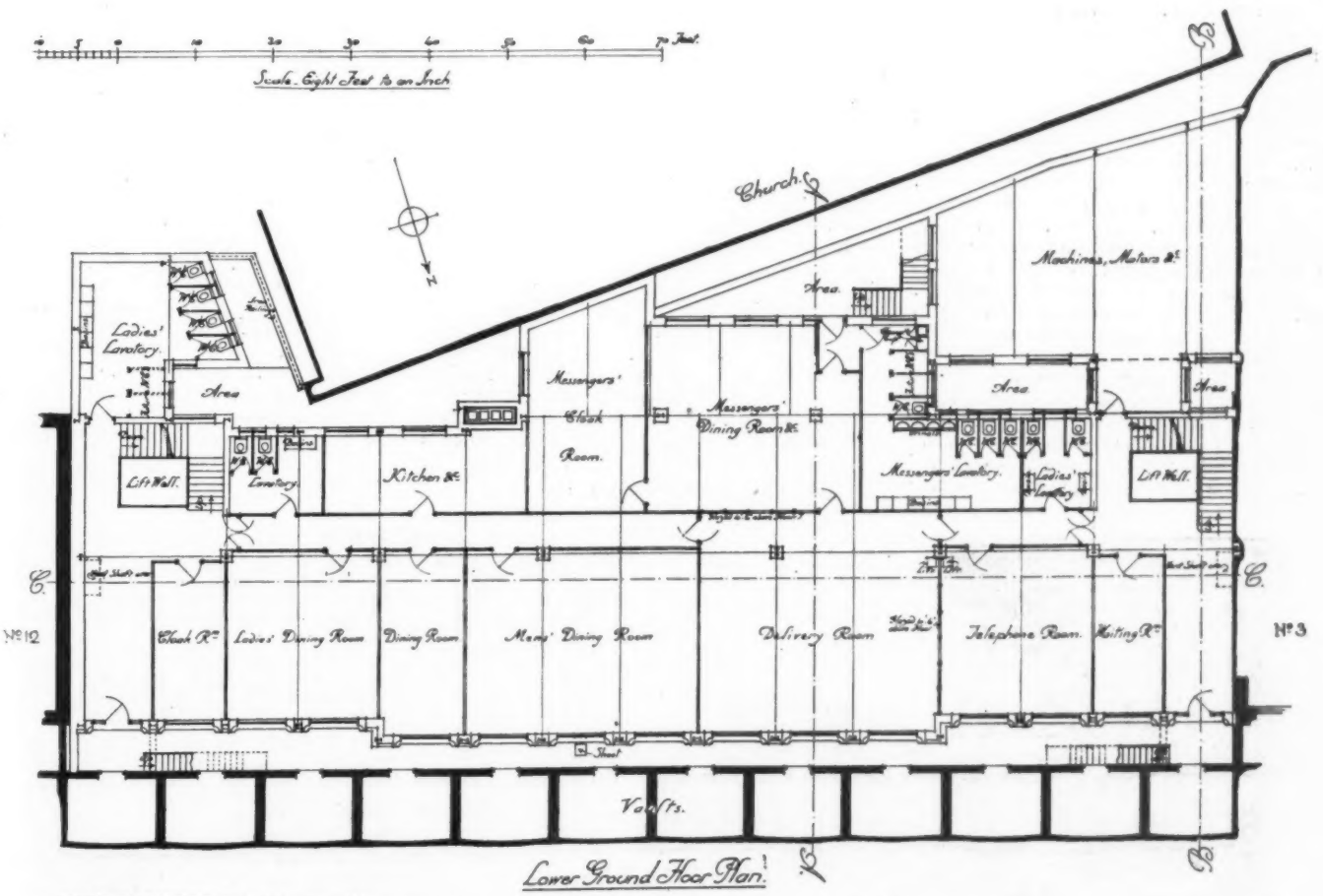
THURSDAY, *February* 16.

Edinburgh Architectural Association.—Mr. O. Paterson on "Digressions in Stained Glass." At 117, George-street. 8 p.m.

Northern Polytechnic.—Mr. R. R. Butler on "Chemical Examination of Sewage Effluents and Drinking Water." At Northern Polytechnic, Holloway-road, N. 7 p.m.



First Floor Plan



Lower Ground Floor Plan.

New Offices for the Great Northern Telegraph Co., Ltd.

MR. HENRY A. SAUL, F.R.I.B.A., Architect. (*See p.* 226.)

LONDINIUM: ARCHITECTURE AND THE CRAFTS.—II.

BY W. R. LETHABY.

BUILDINGS AND STREETS.

(Concluded.)

The most complete Roman building which has been recovered and planned is one excavated in Lower Thames-street in 1848 and again in 1859 (*Builder*, Feb. 5, 1848, and June 11, 1859). A restored plan was given in the Journal of the British Archæological Association, Vol. 24 (see Fig. 5). The two apsed-chambers

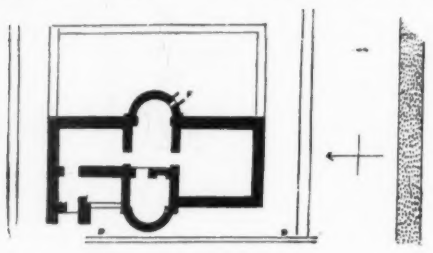


FIG. 5.

had hypocausts beneath their floors, supported on little piers built of tiles 8½ inches square, and broken materials. Fig. 6 is reproduced from the illustration of the eastern chamber given in *The Builder*. Several sketches and some notes, by Fairholt, of this building are in the Victoria and Albert Museum. About four or five feet of the walls remained in places all of tiles with mortar joints nearly as thick as themselves. "The walls were of red and yellow brick in alternate layers composed of 18 in. tiles." Outside the walls was "a drain of wooden planks, 18 in. deep by 10 wide, running towards the river" (see plan). The heads of piles are indicated in the ground and the walls were erected on piles. The sketches show several of the box-flue tiles, some of which had impressed patterns (see former paper and Fig. 6). Some additional information is given on a lithograph by A. J. Stothard (1848). The walls were three feet thick. Above the floor of the S. room, which was of coarse red and yellow tesseræ, was a second, about a foot higher in level; this was "a layer of red concrete 2½ ins. thick, hard, and the upper surface almost glazed" (compare a floor found in Eastcheap, "concrete stuccoed over and painted red."—V.C.H.). This building was doubtless a house; at the time it was found it was called a bath. but it seems too small to have been even a secondary public bath. As Thos. Wright says, "Many writers have concluded hastily that every house with a hypocaust was a public bath" (*cf.*, the plan of a house at Lymne, T. Wright, p. 160.) The stoke-hole of the hypocaust was at F, and there were flues up the middle wall and the western apse. The large room was 23 feet square; some tiles of 2 ft. square were found here, also window glass and an iron key. The plan lay square with the S. city wall (Fig. 5) and the building can hardly be earlier than this wall. It may thus be accepted as a late fourth century house, and we may further infer that box tiles with impressed patterns were a characteristic of this century. On two sides of the house were lanes about 10 feet wide. As in so many cases modern walls seem to have been laid out on the same alignment as the Roman building.

The house just described had two apses and the Bucklersbury house also had an apse. This was in agreement with general custom. As Thos. Wright remarked: "One peculiarity which is observed almost invariably in Roman houses in Britain is that one room has a semicircular alcove, and in some instances more than one room posseses this adjunct." In the plan given in *Archæologia* of the Roman walls and floors found in and about Lombard-street in 1785 two apses seem to be indicated; thus we have evidence for five in the scanty records; altogether there must have been scores in the city.

Within the walls of the City were many large houses of the villa type as well as minor dwellings and streets of shops. Roach Smith speaks of such great houses about Crosby-square; he also describes a mosaic floor under Paternoster-row which extended 40 ft.; a second important floor on the site of India House, Leadenhall-street, was at least 22 ft. square, and may have been considerably more; a third large floor which was found under the Excise Office, Broad-street, was about 28 ft. square (probably 30 Roman feet). All these must have been the floors of the chief central rooms of large houses of the villa type. Tite saw this of the Broad-street floor as speaking of the "triclinium, other rooms, and the garden shows." This Broad-street pavement was lying square with more modern walls surrounding it, and it may not be doubted that buildings continuously occupied the site.

Fragments of wall decorations and mosaics found in Southwark suggest that there were big houses on that side of the river, and doubtless others occupied sites along the Strand and Holborn. The supposition that there were important houses of the villa type within the walls of the City has been fully confirmed by the excavations at Silchester, and I may here quote Dr. Haverfield's general conclusions as to Roman towns in Britain. "Roman British towns were of fair size, Roman London, perhaps even Roman Cirencester were larger than Roman Cologne or Bordeaux. They possessed too the buildings proper to a Roman town—town hall, market place, public baths, chessboard street-plan, all of Roman fashion; they had also shops and temples and here and there a hotel. . . . The dwelling houses in them were not town houses fitted to stand side by side to form regular streets; they were country houses, dotted about like cottages in a village. But in one way or another and to a real amount Britain shared in that expansion of town life which formed a special achievement of the Roman Empire." The evidence as to the isolation of the houses is here a little overstated, but in the main the passage gives a true impression.

I give here a little sketch plan (Fig. 7) of a house found about a century since at Worplesdon, Surrey, from a survey at the Society of Antiquaries. This house is interesting as its unaltered plan gives an example of a simple

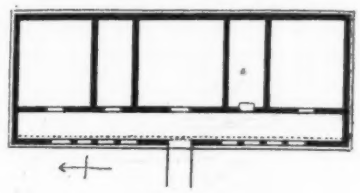


FIG. 7.

"Corridor House." It was 62 ft. long by 22½ ft. wide within the foundations and faced west. The slight foundations of flint, not much more than a foot wide, show that the walls must have been of timbering or wattle work. The rooms and passage had floors of plain coarse tesseræ, except that the outer side of the passage had a simple twist border in mosaic. Possibly there had been some pattern in the central room as the floor was there missing, and a note reads: "Near this place was found the lozenge-shaped tesselated pavement."

Baths, Temples, &c.—Remnants of important buildings have been found in Cannon-street from time to time, and London Stone is probably a fragment of one of them. Wren was of the opinion "by reason of its large foundations that it was some more considerable monument in the Forum; for in the adjoining ground to the south were discovered some tesselated pavements, and other extensive remains of Roman workmanship and buildings." Under Cannon-street a building with one apartment 40 by 50, and many other chambers is mentioned in V.C.H. At Dowgate-hill the foundations of large edifices are listed in V.C.H., and of Bush-lane it is remarked: "That there must have been extensive buildings here seems clear." At Trinity-lane, Great Queen-street, "great portions of immense walls with bonding tiles" have been found (V.C.H.). There was a house on the south side of St. Paul's known as *Camera* or *Domus Dianae* which may have taken its name from some Roman monument. In a St. Paul's deed of 1220 it appears as a messuage or inn, *domum que fuit Diane*.

In December last Mr. Lambert described the foundations of a building by Miles-lane. The plan of this suggested a house of the corridor type facing east. The site seems to have been levelled up by timber walling or wharfing against the river and running back into the sloping ground.

One of the most important public buildings in the City would have been the Public Baths, as those of Silchester and Wroxeter show. At Treves the great Baths cover acres of ground by the river. Bagford says that after the fire of London some Roman water pipes were found in Creed-lane which had been carried round a

A. B. C.

FIG. 6. (A, old masonry; B, brickwork with a flue-tile; C, foundations of chamber.)

Bath that was built in a round form with niches at equal intervals for seats." This suggests a part of important Baths, and Creed-lane does not seem an unlikely situation for the Public Baths. (In V.C.H. the site is said to have been in Ludgate-square.)

The only certain evidence we have for Temples are some inscriptions and sculptures. For the most part they would, like those found at Silchester and elsewhere, have been small square and polygonal structures set on a rather high podium approached by steps. Fig. 8 is a restored plan of the little Temple found at Caerwent. Doubtless here and in most cases the roof of the cella ran on to cover the podium. At the foot of the steps an external altar would have stood. The column illustrated in Part I seems suitable for a temple. Roach Smith, speaking of the group of Mother Goddesses found in Crutched Friars (see *Builder*, Oct. 30, 1847) says: "It is the only instance with the exception of the discovery made in Nicholas-lane in which the site of a temple can with reason be identified" (*Ill. Rom. Lon.*, p. 33). The find in Nicholas-lane was part of an important and early inscription which may have been on the chief temple in Londinium. At the Guildhall is an inscription: MATR . . . VICINIA DE SVO RES . . . in late lettering. This is a record of the repair of a shrine of the Mothers. Some sculptures found on the bank of the Walbrook suggest that a cell of Mithras occupied the site. In the fourth century a Christian church would, as at Silchester, have occupied an important site in the City.

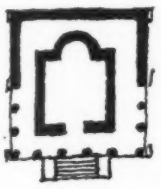


FIG. 8.

A large Theatre or Amphitheatre, or both, would have been necessary in such a town. Roach Smith, who had a wonderful instinct of insight, thought that such a building probably occupied a site against the bank of the Fleet, called "Breakneck Steps." There is some evidence that gladiator contests and chariot races were popular.

For gladiators compare two small bone figures at the British Museum, evidently from one shop, with the fragment of a little statuette at the Guildhall. The bronze trident-head, also at the Guildhall, really does seem to be a gladiator's weapon as suggested in the catalogue. For chariot races, see the fragments of glass bowls, which may have been made in London, in the British Museum. I have found an additional little point of evidence on chariot races. Amongst Fairholt's sketches at the Victoria and Albert Museum, is one of an enigmatical little fragment of a Castor vase, found in Bishopsgate-street, which seems to represent four heads of dogs running neck and neck. Now there is a whole vase in the British Museum (not found in London) which was practically a replica of the other, and this shows that the four running animals of the fragment were chariot horses, and the whole represented a race. Above the horses of the fragment is scratched ITALVS which, I suggest, must have been the name of some favourite "winner" in Londinium.

Streets.—In his account of the Bucklersbury pavement, Price describes also some walls which were found "about 30 yds. westerly from the pavement" (the position is also shown on his plan). "Two Roman walls running nearly in line with Bucklersbury directly towards the Walbrook." In the space between them had been laid a drain to fall towards the brook with a tile pavement above and mortar fillets against the walls. The walls were 2¾ ft. thick, and built on three rows of piles, and the space between was 2¼ ft. The tiles are of the usual kind of red and yellow brick. Above these walls were others of chalk and stone 3 ft. apart, of later date. This is one of a great number of instances where we find that mediæval buildings were founded directly on Roman walls. The space Price suggested was "an open passage way, or it may be of an alley between two buildings." Comparison makes it certain that the walls were those of neighbouring houses in a street; similar conditions have been found at Caerwent, Silchester, &c. At the former "the shops along the main street were probably roofed with gables; this is substantiated by the finding of a finial in front of a house. The narrow space between the houses would serve to carry away the water which would drop from the eaves" (*Archæol.*, 1906). The walls are shown in Fig. 9.

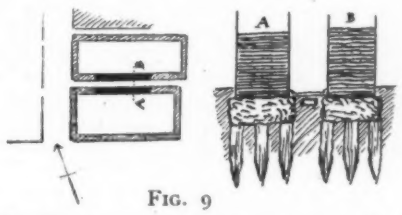


FIG. 9

The Bucklersbury paved passage, only just wide enough for a man to get at it, with the underlying drain, is obviously a similar space. The tradition of dividing houses in streets from one another in this way lasted into the Middle Ages (see V. l'Duc's *Dict. Maison*) and, of course, occasionally to modern times. By this means party walls and difficult roof gutters are avoided. From the two parallel walls we are justified in inferring a row of houses—possibly shops—and a street running to the west of them; moreover, the example suggests to some extent what continuous streets of houses must have been like. In Southwark a passage-way between houses was found 3 ft. 8 in. wide.

It has been mentioned above how in several cases, as is clear even from our imperfect records, that later walls were founded directly on Roman walls. Modern buildings were thus in direct and unbroken succession to Roman ones and maintained the same alignment. In the Archer collection at the British Museum is a drawing of "a Roman pavement and foundations, supposed to be remains of Tower Royal" in Cannon-street; this again was square with modern work. Roman remains have been found under several churches. Massive walls of chalk were found under St. Benet's Gracechurch. Roach Smith, speaking of a floor found at the corner of Clement's-lane, says "This adds another to the numerous instances of churches in London standing on foundations of Roman buildings." In 1724 Roman foundations were found under St. Mary Woolnoth and "three foundations of churches in the same place" (Minutes Soc. Ant., 17 June). Even Westminster Abbey and St. Martin's in the Fields were built on Roman sites, and so probably was St. Andrew's, Holborn.

This continuity of the buildings from the Roman Age is not only an interesting fact but it is a strong argument for the general continuity of the street lines as well. The plan of the extensive finds in and about Lombard-street in 1785 shows the building to have conformed very much to lines parallel with and at right angles to St. Swithin, Sherborne, Abchurch, Nicholas, Birchin and Clement's Lanes, and I cannot doubt that these lanes are in some degree the successors of Roman streets. In "Lombard-street and Birchin-lane the discoveries are said to have indicated a row of houses" (V. C. H.). If all the evidence as to the "orientation" of buildings and walls was laid down on a plan, merely marking the direction of the minor ones with a cross, we might build up further results in regard to the direction of the streets. At the same time it would be vain to expect any large and simple scheme of lay-out of the chess-board type, the Walbrook and other streams, and probably the persistence of some earlier lines (Watling-street to St. Albans?), would have interfered with that. The Walbrook seems to have been crossed by two chief bridges, which must have been governing facts in the lay-out; Cheapside-Bucklersbury, I cannot doubt, represents one east to west street, and Cannon-street another. Thames-street must have been formed when the south City wall was built. I have spoken of the north-south lines above. St. Bennet "Gerschereche" is mentioned in a charter of 1053 (*Athen*, Feb. 3, 1906).

Wren found a "causeway" made up of stones and tiles by Bow Church (under the present tower). It is suggested in V. C. H. that this was an embankment, but *causeway* was one of the regular names for a Roman

FIG. 10.

FIG. 11.

road. At Rochester one 5 or 6 ft. thick of hard stuff has been found crossing some soft ground.

The best way now to see back the old Roman City of London is to go to the foot of the hill below St. Magnus the Martyr and then, turning away from the riverside quays of the seaport, to walk up the street which still retains something of the look of a High-street in an old market town. Behind it we may still discern the ghost of the Roman Axis-street. Right and left are narrow streets with red plastered houses separated by little "drangways." Here at a corner is a small temple with a dedication to the deified emperor. There is the great City Bath. Farther on is the civic centre, the Market-place and hall; one a square piazza containing imperial statues in gilt bronze, and the other a big building having internal ranks of tall Corinthian columns, a wide apse, and an open timber roof—sombre but noble. Round about are many isolated and widespreading mansions, one doubtless being the palace of the Governor of the province. Beyond are the walls and gates which will be next described,

FIG. 12.

and in the background rise the northern heaths and wooded hills now called Hampstead and Highgate.

* * * * * *

Note.—I have just found some old notes made at Bath which further explain the interesting methods of building vaults with box-voussoirs as described in my last paper. There are several such voussoirs in the ruins of the Great Bath, 12 to 13 in. deep by 6 and 6½ in.; 6¾ in. and 7½ in.; 8¼ in. and 10 in.; 8 in. and 11in. at the top and bottom. Fig. 10 is a sketch of the third; it is scored on the face. The notches cut in the sides take the place of the holes in the London examples, and doubtless were for the mortar to get a better key (in my former paper I wrongly spoke of these as square); Fig. 11 is from a vault of this construction which was further strengthened by a series of curved tiles set in the outer concrete mass, which was 6 in. thick; Fig. 12 shows the ridge of such a vault, this may be an imagination of my own. One of the fragments showed six or eight flat tiles set longitudinally crossing the lines of the box-tiles (Fig. 13). The ridge termination (Fig. 14) is also from Bath.

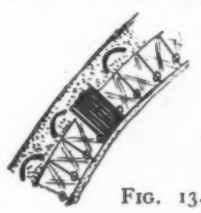


FIG. 13.

FIG. 14.

HISTORICAL BUILDING CONSTRUCTION.—III : MASONRY.

BY MARTIN S. BRIGGS.

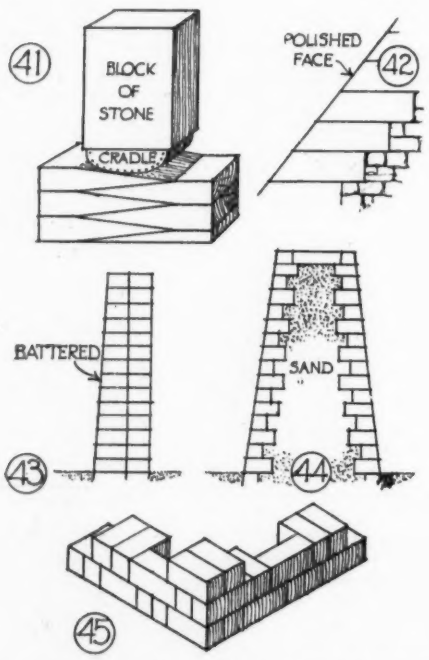
In dealing with masonry it is difficult to draw any distinction between construction and architecture. Whether in Greece of Hellenic times or in England of the Middle Ages, architecture and building in stone were synonymous. It is therefore obviously impossible to deal even adequately with masonry in one short article. To make the subject at all manageable we must exclude all masonry on the grand scale and in its more complex forms, limiting ourselves to the study of its minor aspects and its practical side.

The oldest masonry of which we have any accurate knowledge is that of the ancient Egyptians, who used limestone, sandstone, granite, basalt, alabaster, and diorite. The limestone cliffs forming the desert escarpment on each side of the Nile valley have always supplied excellent stone, the finest variety being obtained from the Muqattam Hills, near Cairo. These cliffs extend 400 miles south from Cairo. Soft sandstone from Silsileh was commonly used from the twelfth dynasty onwards, especially in the Thebaïd. Red granite came from Aswan, where the quarries still remain, with evidences of the methods used for obtaining the stone. It is generally believed that it was split from its bed by means of rows of wooden wedges that were wetted and allowed to swell after being fixed in position. The use of the red quartzite sandstone from the Jebel Ahmar (" Red Hill "), near Cairo, became common after the twelfth dynasty.

Blocks of masonry had their edges dressed first, then the surfaces were tested with a string stretched across two offset sticks resting on the edges, and the diagonals were tested in the same way. The final smoothing was tested with a plane smeared with red ochre, which left a mark on any projecting irregularity.

Granite and other hard stones were sawn, or cut with tubular drills. Sand was used for cutting the softer stone, and emery for hard rock, the small pieces of emery being fixed in a saw-blade. The hammers used for dressing hard stone were of black hornstone.

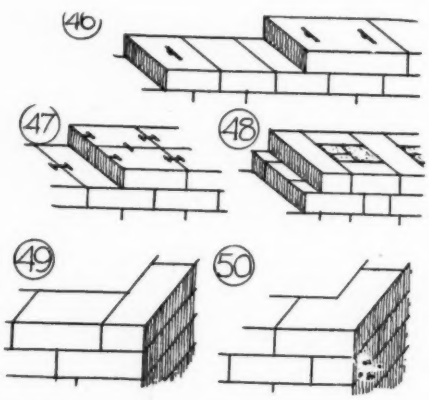
Professor Flinders Petrie also describes the methods used for raising the enormous stone blocks to their position in the building. Instead of scaffolding, inclined ways made of



earth or brickwork were raised to the top of all walls and perhaps revetted with masonry. This apparently cumbrous method is, however, easily explained when one remembers that timber in Egypt was always scarce, while labour was scandalously cheap. Moreover, it is unlikely that, even if the construction of framed scaffolding had been understood in those days, it would have sufficed for the enormous blocks of stone. Those in the base of the Great Pyramid at Giza weigh 16 tons. Small blocks were " rocked " on wooden cradles, a wedge being inserted every time the block was rocked to and fro with the aid of crowbars (Fig. 41). Obelisks were floated down the Nile from Aswan on barges, then rolled up to the end of an incline (which in one case was ¼ mile long, 95 ft. wide, and 103 ft. high on the slope, revetted with timber and brushwood), and then were tipped over the end of the slope and erected.

Mortar of lime and sand, as we understand it, was not used, a mixture of lime and plaster-of-paris being employed as a rule. In the Great Pyramid the vertical joints were only one-fiftieth of an inch thick, and it is difficult to see how they were filled with plaster, as they certainly were. The core of the Pyramids, of rubble masonry (Fig. 42), was grouted with coarse plaster. This plaster was obtained from the limestone quarries, but owing to scarcity of fuel it was often badly burnt and therefore lumpy.

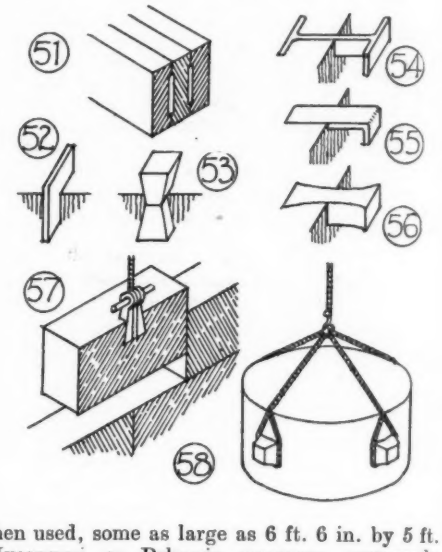
Metal or sycamore dowels were used to



secure blocks in position. One such has been found in an obelisk at Luxor. Dovetail-shaped dowels were used for connecting the drums of columns, which were seldom monolithic. The great temple walls were built in two thicknesses, with a vertical through joint and no through bond-stones (Fig. 43). For the pylons a similar method was used, but sand was used to fill up the space between the two battered walls (Fig. 44). The Egyptians were limited only by the size of lintels and ceiling-slabs that they could quarry and handle. Enormous and massive as was the effect produced by their system of trabeated construction in stone, it was often daring in the risks that were taken, and the strength of material was tested to the very limits of safety. They attempted the construction of stone walls in early times, but these were corbelled out, and not till the twenty-sixth dynasty do we meet with a proper stone barrel vault.

In Assyria in early times masonry construction was less important and was largely confined to facing. The sketch (Fig. 45) shows the method of bonding the facing-blocks into the wall. Under Persian rule the blocks of stone were held together by dovetailed cramps, probably of metal, but the use of stone was chiefly confined to colonnades, plinths, and dressings.

In pre-Hellenic Greece and in Crete masonry was largely employed. In Crete small rough stones were used at first, set in a mass of clay, then the size of blocks was increased and the thickness of beds decreased. The so-called " Cyclopean " masonry was relatively late in date. The best masonry is of the Middle Minoan period (say, 2200-1700 B.C.). Finely squared and closely fitting blocks were



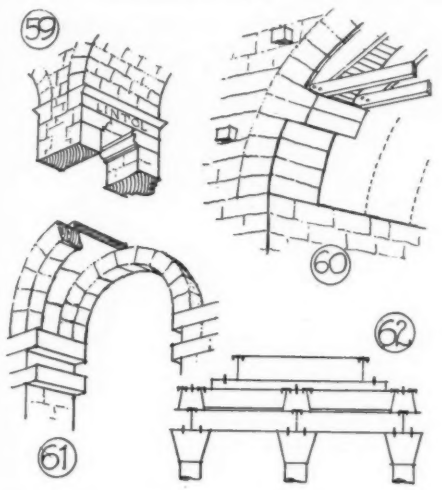
then used, some as large as 6 ft. 6 in. by 5 ft. Mycenæan or Pelasgic masonry, commonly called " Cyclopean," was of polygonal character, sometimes roughly squared, and built without lime-mortar. Enormous stones were used; thus the lintel of the Lion Gate at Mycenæ is 16½ ft. long, 8 ft. broad, and over 3 ft. thick in the middle. Hard stone slabs were sometimes used for facing. Wall-tiles were secured to the masonry by dovetail-shaped bronze clamps. The ends of walls were often protected by wooden posts. The form of the corbelled Mycenæan arch and vault is well known. But on the whole the masonry of these early periods in Greece was far inferior to that of Egypt.

The stone used by the Greeks was generally limestone—as at Olympia, Ægina, Pæstum, and Corinth—or marble—as at Athens. Often a specially hard stone was used for such exposed parts as the tops of cornices, etc. The system of walling followed one of the three methods illustrated, either with all through-stones showing on both faces (Fig. 46); or with through-stones every alternate course (Fig. 47); or with through-stones at intervals, ashlar-facing throughout, and a certain amount of rubble core (Fig. 48). The last-named prevailed in the later Macedonian period, and became general in the Roman period. The lowest course of the wall is usually higher than the rest, and is built in two thicknesses with a space between, thus anticipating the modern damp-proof hollow wall. Oblong stones were generally used at the quoins (Fig. 49), and only in later work do we find square stones rebated, as in Fig. 50. Walls were always built dry, mortar never being used in ashlar work. Even in the best periods the Greeks did not always lay stone on its natural bed. For horizontal stone beams or lintels the Greeks often laid three stones abreast (Fig. 51), thus facilitating handling and at the same time reducing risk of failure through a weak vein.

The accuracy of the jointing of Greek masonry is wonderful. In the sixth century the whole of the bed was smoothed, in the fifth century only the edges. Thus the weight was carried on only a small part of the area of the bed, but that part was made sufficiently wide for its purpose. To prevent spalling with such close joists the edges were often rebated or V-jointed. Only the carvings of the metopes, triglyphs, etc., were worked on the ground. The facings generally had accurately dressed margins, to which the surfaces were adjusted after fixing. The drums of the

columns of the Parthenon had very fine joints, obtained by rotating them on a bed of sand. Into each drum was cut a recess 4½ in. square and 2½ in. deep for a plug of cypres-wood, in the centre of which was a circular dowel used in revolving the drums.

Dowels and cramps (Figs. 52 to 56) were

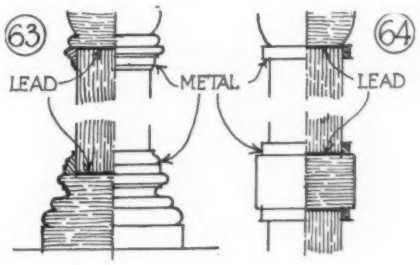


largely used in masonry owing to the prevalence of earthquakes. In the archaic period they are not found; in the sixth century in Sicily wooden dowels were used only for the drums of columns, but from the fifth century in Greece metal fastenings of surprisingly "modern" pattern (as the sketches show) were systematically employed. The Greeks, as a maritime nation, understood the use of all sorts of tackle and lifting appliances, but it is startling to find in the pages of Choisy a drawing of a Greek lewis that differs in no way from the one we use to-day (Fig. 57). Stones raised by this means were finally levered into position with a crowbar. Another method employed for raising or lowering of hard-stone drums of columns consisted in the use of *ancones*, or ears worked on the face of the drum, as the sketch shows (Fig. 58). Apart from their marvellous skill in scientific stereotomy, the Greeks appear to have been competent and practical masons.

Roman masonry closely followed that of the Greeks so far as ashlar work is concerned, but the Romans evolved a form of building in rubble or concrete, so different from masonry proper that it is relegated to my next article, under the head of "Concrete." Their system of building in ashlar had both a Hellenic and Etruscan origin. From the Etruscans the Romans borrowed the barrel vault and the joggled lintel; from the Greeks most of their other features. The Etruscans had used stone arches and vaults from very early times. The voussoirs of the Cloaca Maxima at Rome are in three rings, each 2 ft. 6 in. deep. Another early example has voussoirs 5 ft. deep. They also constructed vaults corbelled out in horizontal courses, in the Mycenæan fashion, and their masonry was either polygonal or square.

The three chief kinds of building stone used by the Romans are tufa, travertine, and peperino. The earliest known secular building of the Republican period, the Tabularium on the Capitoline Hill (78 B.C.), is built of peperino in blocks 4 ft. by 2 ft. by 2 ft. high, laid alternately as headers and stretchers, with a thin layer of mortar in all joints and a tufa core behind. Peperino is a hard volcanic stone, unaffected by fire, and quarried near the Alban Hills. Tufa is a soft stone which weathers badly, and was usually protected by stucco. The tufa blocks used in early work were usually 3 ft. to 4 ft. long, 1 ft. 10 in. to 2 ft. high, and 1 ft. 9 in. thick. Travertine is a compact, hard limestone, quarried near Tivoli, and was used where great strength was required, as in the voussoirs of arches. It makes an excellent lime when burnt, and this partly accounts for the durability of the Roman mortar and concrete, to be described in Article IV. Some of the travertine blocks at the Colosseum are as much as 15 ft. long. The inner walls are of tufa and concrete with brick facing, and the vaults are in concrete. The Theatre of Marcellus is of travertine covered with hard white stucco to imitate marble. That the Romans understood the seasoning of stone is clear from Vitruvius, who states (II, vii, 5) that if inferior stone is to be used, whether as rubble or ashlar, it should be quarried in summer and then exposed to the weather for two years. In cases where (as at the amphitheatre at Arles) great monolithic lintels bore the thrust of barrel-vaults, the Romans were quite prepared to lay stone on its wrong bed, as the Greeks had done before them (Fig. 59). In later times they imported great monolithic granite columns for use with concrete vaults.

The Romans used dovetailed dowels in later work for connecting ashlar blocks in successive courses, fixing them by running molten lead into the hole after the block was laid, through a small channel in the lower stone. Much of their ashlar masonry was built dry without mortar, but mortar was used in Syria and Africa. They seem to have understood the use of most modern building appliances, so that part of the tenth book of Vitruvius reads like a modern treatise on scaffolding and tackle. For reasons of economy in timber they preferred the use of "flying" scaffolds resting on projecting stones (as at the Pont du Gard, Fig. 60) to tall structures resting on the ground. At the Pont du Gard no centering



was used for the lower parts of the arches, the courses being built projecting. The vaults here are really a series of separate parallel arches allowing of the centering being moved along from one to the other. Sometimes a form of barrel-vault was constructed of arches arranged in the same way, but with spaces between, which were covered with large stone slabs (Fig. 61). This system was specially popular in late work in Syria, and is also found in the Baths of Diana at Nîmes.

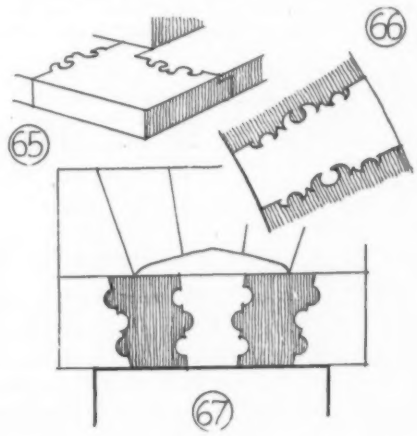
Fig. 62 shows the construction and jointing of a typical Roman entablature for a colonnade, from the Temple of Jupiter Stator. Here each bay of the frieze consists of two blocks tapered upwards carrying flat relieving-arches or lintels. In light construction the Romans cut a whole entablature out of one block of stone. In their Pompeian buildings the real work of the entablature was sometimes done by timber beams, the stone facing becoming merely decorative. Joggled lintels were occasionally used, as in the Theatre at Orange and at Spalato.

In regard to the scale of Roman masonry it may be noted that the average height of the courses at the Pont du Gard, where no mortar is used, is about 2 ft. The famous *trilithon* at Baalbek consists of three stones, averaging 63 ft. long, 12 ft. high, and 11 ft. deep, with joints so fine that a small knife-blade cannot be inserted between them, while another stone lying near them measures 77 ft. by 15 ft. by 14 ft. Space does not permit of any treatment of Roman groined vaulting in this article.

The masonry construction of later buildings in Syria is extremely interesting, and shows a development from Roman methods. True arches were used, and also lintels carved into arch form. The remarkable dome of the Church of St. George at Ezra was built dry, without mortar. The method of building without mortar also prevailed in still later work in Armenia, where limestone was scarce.

Byzantine masonry is for the most part a development of the so-called Roman "concrete" construction, as will appear in Article IV. Bricks were used alternately with stone courses in vaults and arches as well as in walling. Materials, especially marble columns, were rifled without scruple from older buildings, but these were now used structurally to an extent that the Romans had never dreamed of. The *dosseret* was invented to bring the shape of the vaulting springer down to that of the capital. The columns were either limestone monoliths, set on the wrong bed, or marble shafts, which were often split down the natural veins or fissures by the weight of the vaulting. To avoid this bands of metal were often used around the neck and base of the shaft (Fig. 63). To lessen the risk of fracture by earthquakes, very prevalent in Eastern Europe, a thin sheet of lead, usually about one twenty-fifth of an inch thick, was laid at the same points, the metal bands preventing it from spreading outwards. Sometimes in later work columns built up of two or three drums were used, on their wrong bed, but with stone blocks laid on their natural bed at the point of junction, and with metal bands and lead seating as before (Fig. 64). The most remarkable example of Byzantine masonry is the Istrian stone lid or flat dome, 33 ft. in diameter, of the tomb of Theodoric at Ravenna.

The Saracens in Egypt and Syria followed Byzantine tradition very closely in their masonry methods, as in the joggled voussoirs of the great gateways of Cairo, designed by an Armenian architect in the eleventh century. Although admirable limestone was to hand in the great Muqattam quarries outside Cairo, the Pyramids were stripped of their stone facings, and both temples and Christian churches were despoiled. But the Egyptian masons of the fourteenth and fifteenth centuries proved themselves marvellously skilful in their use of stone, so skilful, in fact, that their delight in ingenious joggled joints in voussoirs (Figs. 66 and 67) and even in thresholds (Fig. 65), led them into wild excesses. From the Byzantines they borrowed the idea of polychrome masonry, using this as a counterchange to heighten the effect of their daring joggles. The equally startling masonry



of their mosque-domes and minarets, as of their stone "stalactites," is beyond the scope of these articles. Sycamore dowels of dovetail shape were used in masonry.

[The sketches accompanying this article have been specially drawn by myself, but Figs. 43 to 64 are based on diagrams by Choisy, and No. 42 on an illustration in Simpson's "History of Architectural Development." Mediæval and later masonry will be discussed in Article IV.]

THE ELEMENTS AND THEORY OF ARCHITECTURE.—IV.

(BASED UPON THE FRENCH WORK OF M. GAUDET.)

BY T. P. BENNETT, F.R.I.B.A. (*Head of the Department of Architecture, Surveying, and Building, Northern Polytechnic*).

SPECIFIC PROPORTIONS—CONSTRUCTION.—If the architect is the master of proportion, he must have reason for any variations he may make other than mere fancy.

What, then, are the reasons that should govern proportion? They are many. First, there is the question of actual dimensions, and by comparing, say, the Madeleine at Paris with the Oval Court at Fontainebleau, both Corinthian orders, we see at once a great variation in proportion. Whence does this arise? Undoubtedly from the matter of the effective dimension. A few figures will illustrate the point.

The Temple of Mars the Avenger, at Rome, as a very large order, will add emphasis to these figures. There the column diameter may be taken as 100 per cent. The space between two columns is one and two-fifths diameter—142 per cent., and as the column has a lower diameter of 1.786 metres this gives:—

Diameter	1.786 m.
Passage between two columns	2.534 m.
Length of lintel	4.320 m.

It will be seen at once that, although the colonnade is closely spaced in proportion, the actual opening is wide and the length of the lintel necessitates the use of stones of an exceptional size. If we suppose the same proportion to be applied to a very small column having a diameter of 0.50 at the base, we get:—

Diameter	0.50
Space between the columns ..	0.71
Length of lintel	1.21

The passage between the columns would be of a ridiculous size, while an ordinary lintel would span a much wider opening.

In the Portico of Octavius, at Rome, a classic example of the juxtaposition of two orders of unequal size—one being about two-thirds the height of the other—we have about the same distance centre to centre of columns, and the passage between the columns of the lower order is therefore wider than that through the larger, and the proportion of the spaces between the columns of the large order is much more elongated than those of the small order. In general it may be stated that the higher the order the more closely spaced will the columns be; the lower the order the wider the spacing. If an order is drawn of medium height and appears satisfactory, and another exactly similar is placed upon its entablature, the spacing will immediately appear close and uncomfortable. There are several reasons for this:—

(1) The eye takes into account the height of both orders when judging the proportion.

(2) Superimposition makes each order of columns appear a small thing, and therefore subject to the laws of small orders requiring wide spacing.

(3) The eye wants the upper order to be lighter and, therefore, wider in treatment, so that it appears quite capable of being supported by the lower order.

But if this is true of columns it is not true of entablatures. Here the topmost entablature crowns not only the topmost order but the entire building, and must therefore be sufficiently large to dominate the complete edifice. This is evident in such a building as the Palazzo Canellaria in Rome. Coupled columns require wider spacing than single columns, not merely for the sake of finding a place for the extra column, but because any approach to narrow spacing would tend to confuse the space between the two pairs of columns with the space between the two columns, and thus destroy the whole *motif* of the composition. A good example of correct spacing in this matter and the use of a crowning entablature is the Military School, in Paris. Another cause of variety in proportion is the number of columns that are used in a portico. The proportion here is always closer as the number of columns is augmented. One opening will be wide to give free passage. Four, six or eight will be respectively narrower because a greater choice of passage is offered. In this case tradition confirms what judgment and common sense dictate.

We have seen how superimposition of orders affects the proportion of each, but this applies to other combinations of the order with walls or roofs. A proportion that would seem right if used alone will often be wrong when used in conjunction with other features. The beautiful colonnade of the buildings facing the Place de la Concorde looks wide and ugly if the colonnade is imagined standing on the ground with the ground floor removed.

If we now pass to doors and windows we find equal if not greater variation. The question of use is of primary importance. They must be wide enough and high enough for ordinary human beings. They must be of a size that will allow of doors in one leaf or two, windows in one pane or more. The high doors of great buildings which are rarely opened are exceptions. Among the ancients there are traces of an endeavour to secure a proportion of height which is double the width, but this is subject to many variations.

In our own apartments we have single doors and double doors; the width of the latter is almost double the former. yet the height is the same. In monumental doors there are some very great heights; for example, the door to the Temple of Vesta, at Tivoli, of which the mean width is 2.33 m. and the height 5.52 m.—a proportion of width to height of about 2.35. The height of these doors is above the ordinary. Compare them with a *porte cochére*. They have about the same width. The *porte cochére* should be higher because it acts as a covering to a carriageway, whereas the door takes only pedestrians. Yet the *porte cochére* will frequently be much lower. The reason for the increase in height of the doorway is the desire of the architect to produce a "monumental" effect. A complete definition of "monumental" would be complex, but its principal character is the impression of grandeur which is created by comparing a man with a great edifice. When the width of the opening was limited by the size of the lintel the only means of obtaining an impressive opening was by increasing height. We do not hesitate to make the opening higher than the doors and to fill in the space above with fanlights and other accessories in order that we may have "monumental" effect.

To gain impressiveness in monumental interiors there is this same tendency to increase the height above that which is strictly necessary, but in many cases height is limited by the effective dimension between floor and ceiling and then increase of width supplies the increase of size which is required for effect. In small single-leaf doors the proportion of width to height is often greater than that of Vesta of Tivoli, because both dimensions are the least that will admit a human being. To each must be given the study required by attendant conditions, and then proportion used to express the character which is to dominate the design.

Many considerations that apply to doors apply also to windows. The great windows of the Court of the Louvre in Paris have a proportion of 2.43 between the height and the width. Those on the ground floor are higher. This is the domain of monumental architecture. It is obviously the height of the floors which will determine the height of the windows. The window opening in two leaves can hardly have less width than 4 ft. or more than 6 ft. 6 in., while the heights can vary within much greater limits. In a façade all windows superposed will be of approximately the same width in spite of variations in floor heights. Nothing in architectural design is governed so much by attendant conditions as the windows; they will be affected by the climate, the purpose of the building, the height of the floors, the width of bays, the construction, all of which have to be taken into account.

If high narrow bays give monumental effect when lintels are used, the opposite is the case when the arch is employed. The essence of the arch is its ability to span large openings, and when the opening has a wide proportion it appears to give increase of scale. Construction, therefore, when allowed natural expression, gives good results. There are, of course, cases when a high proportion in an arched opening is impressive, as, for example, in the Arc de Triomphe in Paris, but here the width is already so great that it gives monumental character and the height adds to that impression.

In all these variations one fact stands out—truth is the keynote of all good architectural expression and all fine architecture. Recognition of the material and moral needs of the building, of the wants of construction, of the demands of climate; these, justly balanced, give fine design.

Exceptional proportion may in the hands of genius sometimes give monumental effect, but what does this say after all? Only that "there are no rules without exceptions." These investigations into the variations of proportion in the elements of architecture might be continued indefinitely, but we must now pass to the proportion of parts of the building, such as halls of various kinds, vestibules, staircases, &c. These proportions cannot be varied arbitrarily by the designer, although their variety is infinite. Thus, in the height of one floor there will be salons, bedrooms, passages, bathrooms, &c., all of one height but of varying widths, and hence varying proportions. This variation the designer must accept and deal with according to his ability. All that we can say is that great heights do not suit small subdivisions, or *vice versa*. It is necessary that the general height should be in proportion to the average size of the rooms, or in some instances to the most important rooms.

We have mentioned two needs which must be satisfied:—(1) Material needs; (2) Moral needs.

Material needs include such things as lighting, headroom, &c., light over corridors to give cross ventilation in schools, the triforium in a cathedral. In lighting, 20.0 to 25.0 will be the maximum depth for a building 12.0 floor to floor if the whole is to be well lighted from one side; deeper rooms must be higher, regardless of proportion. Construction requires supports at intervals more or less wide according to the loads it has to carry and the depths available for beams. All material needs have only to be enumerated to seem obvious, but there still remain moral needs. What are these?

Moral needs represent the necessity for imparting the correct feeling or atmosphere into the building. Thus the Gothic church is given its high proportion to obtain the effect of aspiration; the restaurant is often low because of the sense of comfort thereby occasioned, and so on. These moral needs will far outweigh all others in importance, and will actually be the governing factors in proportion.

All that we have studied so far shows that plan, section, and elevation must be considered together. Notice the order of these words—this is the order in which they should be developed. After the plan and section construct the grid, giving all horizontal and vertical lines demanded by plan and section, and on this grid construct the elevation. Then, after roughing-in the elevation, ask the plan and section whether required modifications can be made, and readjust the whole. By this means windows too high or too low will not appear; floor lines will be in the correct position; subdivisions, either horizontal or vertical, which are impossible will never be designed. Study design above all things. Science and construction are dependent upon that and must be made to serve it.

Learn design in architecture not merely from

books but from buildings; by this means everything that is produced will be sane and practical. The study of construction must proceed with the study of art and keep pace with the development of artistic skill. Architecture has for its end "constructions," and for its means "construction." Construction is an art and a science—an art by reason of the inventions and combinations by which we meet new difficulties; a science by reason of the control forced upon us by materials and structure.

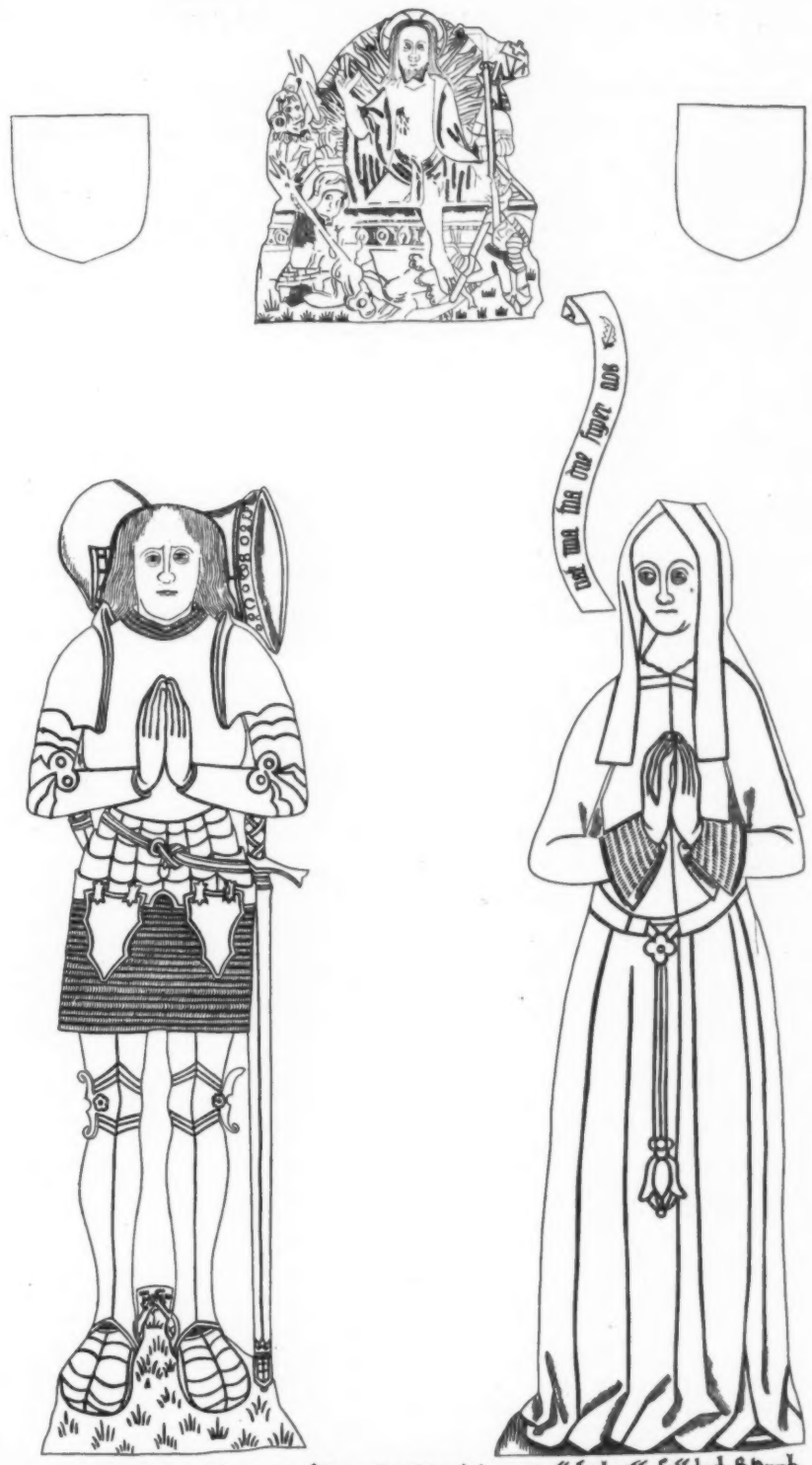
Although in a preliminary architectural conception no actual construction may be shown, the scheme should always be in the realm of the constructible. In this domain we create or choose combinations and study proportion, then the thought or idea fixed verify the stability of the walls, vaults, ceilings, or floors, and finally provide a balance between the two.

In art, science cannot create. If, however, we do not study both art and science we shall become on the one hand incomplete architects because we have only knowledge, and on the other hand incomplete architects because we have only artistic ability.

FIFTEENTH-CENTURY MEMORIAL BRASS AT ST. MARY'S PARISH CHURCH, SWANSEA.

MORE interest has been taken of late years in the study of ancient monumental brasses, and these relics of the past are well worthy of special recognition as to design and workmanship. The earliest monumental brasses were executed at the commencement of the thirteenth century, and many beautiful examples of the thirteenth and fifteenth centuries are now to be seen in various parts of the country. During the sixteenth century and onwards both the designs and workmanship deteriorated.

The example at St. Mary's Parish Church, Swansea, is of the fifteenth century, and is now placed on the floor of the north side of the sanctuary. Full-size drawings of this brass have been prepared by Mr. Glendinning Moxham, F.R.I.B.A., and the accompanying reproduction is taken from the drawings. The brass is to the memory of Sir Hugh Johnys and his wife, and the following is the inscribed description on it:—"Pray for the soul of Sir Hugh Johnys knight and dame Maude his wife which he Hugh was made knight at the Holy Sepulchre of our Lord Jesus Christ in the City of Jerusalem the 14th day of August the year of our Lord God 1441. And the said Sir Hugh had continued in the wars there long time before by the space of five years that is to say against the Turks and Saracens in the parts of Troy Greece and Turkey under John at that time Emperor of Constantinople and after that was knight Marshall of France under John Duke of Somerset by the space of five years and in likewise after that was knight Marshall of England under the good John Duke of Norfolk which John made unto him the Manor of Landymor to him and to his heirs for evermore upon whose souls the Lord have mercy." Above the effigies is depicted on a brass plate the Resurrection with soldiers around the tomb. One evidently represents a Saracen, who is shown sleeping with a scimitar at his left and a spiked mace at his right side. Unfortunately the two brass shields which represented the family coat of arms, and also the brass representing their sons, are missing.



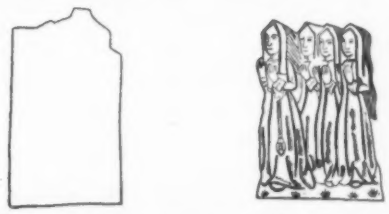
Pray for the soule of Sir Hugh Johnys knight and dame Maude his wife which Hugh was made knight at the holy sepulcre of our lord ihu crist in the cite of Jerusalem the xiiij day of August the yere of our lord gode M CCCC xl. And the said Sir Hugh had continued in the werres the long time byfore by the space of fyve yere that is to say Agayust the Turkes and Sarzyns in the yles of Troy grece and turkey under John p̄ time Emperour of Constantinople and after that was knight marchall of fraūce under John duke of somset by the space of fyve yere And in likewise after that was knight marchall of England under the good John duke of Norfolke which John made unto him the mano of landymo to him & to his heyr for ēr more upon whose soulis ihu have mercy

Fifteenth-Century Memorial Brass at St. Mary's Parish Church, Swansea.

From a drawing by Mr. GLENDINNING MOXHAM, F.R.I.B.A.

Mediæval English Tiles.

At Sotheby's next month a series of eight thirteenth- or fourteenth-century red clay tiles with figures in white slip designed in sgraffito lines, and covered with a yellow glaze, will be offered. The illustrations are of "The Miracle at Cana," of scenes from the Apocryphal Gospels of the childhood of Christ. They were probably made by the Cistercian monks at Coggeshall, a monastery founded in 1142. The tiles were once in the Saxon church of St. Peter-ad-Murum, at Bradwell-juxta-Mare in Essex.



THE SURVEYORS' INSTITUTION.

The Problems of Greater London.

THE discussion on the paper by Mr. W. R. Davidge, F.R.I.B.A., on "The Problems of Greater London" (reported in *The Builder* for January 13), was continued at the Surveyors' Institution, Westminster, on Monday night. The President (Mr. J. H. Sabin) was in the chair, and there was a large attendance.

MR. G. H. HUME, L.C.C. (formerly Chairman of the Highways Committee), who continued the discussion, said the position of the London County Council in this matter was completely misunderstood. He was pleased that such an authority as Mr. Davidge, working independently, working along lines of his own, had arrived at the same conclusion as the Council. He was amazed at the lack of comprehension of the problems with which they were confronted in London. Those problems could not be dealt with because there was no central authority. A *prima facie* case was put before the Prime Minister, who was satisfied there was something in it. The fact that a Royal Commission had been set up showed there was something to be said for the necessity of dealing with the problem, and dealing with it fairly drastically. When dealing with large problems the County Council was unanimous, as it was on this matter, but it declined to put before the Prime Minister any scheme because it knew from bitter experience that as soon as it put forward a scheme so soon would public opinion be mobilised against it. The County Council was willing to be wiped out to secure a solution of the problem. He urged that instead of carping criticism of the Council there should be an earnest attempt to see if some good could be brought out of the movement for the improvement of London.

MR. F. M. ELGOOD said it seemed to him that the kernel of the whole question might be summed up in the quotation which Mr. Davidge made from the report of the Departmental Committee of the Ministry of Health on Unhealthy Areas. It stated: "Our interim report indicated our opinion of the necessity for the preparation of a joint plan for the reconstruction of London, and for a new authority covering a larger area than that of the London County Council, and having powers to deal with certain subjects common to the whole district. We desire to repeat and emphasise our recommendations in those two respects." He entirely concurred with those two recommendations. First there was immediate necessity for the preparation of a plan for the future development of Greater London, and that plan would presumably include the general lines of future development in respect of such matters particularly as transport, both by road and rail, open spaces, allocation of areas for industrial and residential purposes, not only in the undeveloped country, but also in the built-up areas. Second, there was urgent need for a great co-ordinating authority.

MR. FRANK HUNT (Valuer to the London County Council), said, as surveyors, they were perturbed to find that while there was one code of building laws within the County of London, when over the border they were never sure which code was obtaining. What was worse, even if they knew what the code was they were not sure of the way in which it would be administered. They might have exactly the same code of law, but entirely different methods of administration. As surveyors, that was a consideration which they very much deplored. If there was any problem which probably caused a surveyor more anxiety than any other to-day, it was the question of housing. It was sought to deal with the housing problem of London and of Greater London by a series of conferences based very much on the model of the arterial road conferences. In those districts needing very much in the way of assistance the obligation was always imposed on a community of finding somebody prepared to bear the burden. It was impossible to group together Edmonton, Tottenham, and West and East Ham, and expect to find help in that direction. It could only be done by a much wider grouping of areas.

MR. H. J. LEANING said he felt they were on the eve of a great change with regard to London. Many things had to be done in the near future, but it was very difficult to see where the funds were coming from. It was difficult to imagine what London would become in 20 or 40 years' time if allowed to go on as it liked. He did not suppose anyone would like to see London built solidly for 20 miles all around, but unless something were done it seemed to him that was what might happen.

MR. HORACE CUBITT said he thought surveyors were practically agreed that the machinery of local government was not working as efficiently as it should, and that it required altering. If the County Council area were extended it seemed to him the new authority must not endeavour to do anything like the detailed work it had done. The idea of one great authority and subsidiary authorities was all right so long as the subsidiary authorities were not too subsidiary. It appeared to him they should have possibly not more than nine local authorities, not the borough councils they knew, but larger bodies. If they had larger authorities they would get much better results.

MR. J. CALVERT SPENSLEY, and MR. W. AUGUSTUS FARNHAM also took part in the discussion, while MR. EDWARD WILLIS (Chiswick) sent a written communication which was read by Mr. Alexander Goddard (Secretary).

MR. DAVIDGE, replying to the discussion, said its general trend undoubtedly was, first, that there must be a comprehensive plan for Greater London, and, second, that there must be a central co-ordinating authority. Another important corollary was that local interest which was the backbone of local government, and must be in some way or other maintained. He thought, broadly speaking, that was the whole gist of the matter.

The PRESIDENT said he regretted that the Lord Mayor was not the head of the whole area. He thought that if the City Corporation were to formulate a scheme and place itself at the disposal of the Commission in the same way as the London County Council had done, considerable advance might be made.

The Junior Institution of Engineers.

The annual dinner and ladies' night of the Midland Section of the Junior Institution of Engineers was held on January 31, Mr. R. B. Asquith Ellis, A.M.I.Mech.E., in the chair.

Covers were laid for some seventy members, ladies and guests; and following the toast of "The King," Dr. C. C. Gerrard presented an electric gong to the Section on behalf of the staff of the General Electric Co. Mr. Ellis accepted the gong in the name of the Midland Section and immediately made use of it to call on Mr. E. C. R. Marks, M.I.Mech.E., to propose the toast of the "Institution." Mr. Marks, in the course of his speech, mentioned how the Institution differed from the general practice of the senior institutions, and how those Institutions had looked to the juniors for suggestions, notably the formation of the local sections. The toast was honoured and replied to by Mr. W. A. Tookey, M.I.Mech.E. (Honorary Treasurer) in the absence of the Chairman of the Institution (Mr. E. C. West), who gave a résumé of the work of the Institution and remarked on its steady growth. Other toasts were the "Midland Section," proposed by Principal Schofield, M.B.E. (Chairman of Loughborough Section), "Kindred Associations," proposed by the President and seconded by Mr. R. A. Chattock, M.I.E.E. (City Electrical Engineer, Chairman of the South Midland Section of the Institution of Electrical Engineers), "Our Guests," proposed by Mr. G. W. Costain (Past Chairman of the Section) and replied to by Mr. Hyde (Vice-President of the Sheffield Section), and "The Ladies," proposed by Mr. E. M. Boote (Vice-Chairman of the Section) and replied to by Mrs. R. B. A. Ellis.

EXHIBITION NOTES.

THE TWENTY-ONE GALLERY.

A small exhibition worth seeing comprises the work of Ursula Wood and E. Stewart Wood at the Twenty-One Gallery. Both these artists give the impress of sincerity and pleasure in their work. The studies of child and animal life and the dainty landscape sketches have real charm, and doleful as is the subject the water-colour drawing of "Death" is a most pleasing rendering of tone and colour. The variously treated landscapes by Stewart Wood include a quite charming picture of "Capri" and other excellent things, such as the fine rich colour in "Seashore" and the admirable picture of "The New Forest;" the vivid lighting in "Fenworthy, Devon," and the pleasing view of "Richmond" with its suffused glow of light and colour, and a "French Road" may be specially noted.

THE LEICESTER GALLERIES.

We suppose the name of Degas calls to mind clever drawings of rather coarse-looking ballet girls in many odd positions, but the exhibition of his work at the Leicester Galleries gave the picture-goer a better knowledge of his capacity, for here were many masterly drawings which impressed one with the vividity of real life. Ballet girls as a subject may not present a very enduring attraction, but Degas has a masterly way of presentment, and this exhibition showed that his outlook is certainly not limited to the ballet, and one may be inclined to wonder whether it was worth the study he devoted to it and whether he might not have found a finer outlet for his great powers. Amongst the drawings were some delightful landscapes and seascapes; there was much charm of colour in Nos. 48 and 49, 45 and 46. Quality of colour was, however, seldom or never lacking, notably in such admirable work as the pastel of "Les Blanchisseuses" (36) and "Femme se Coiffant" (50). Amongst the etchings, drypoints and lithographs we think the subject was seldom equal to the execution. Degas was born in 1834 and died in 1917.

The sparkling flower pictures by Beatrice Bland have a quality which is somewhat rare in work of this kind, for the colour, however brilliant, is never discordant, and the brilliance justifies itself. One of the pictures (22) "Spring Flowers," had a charm of colour and breadth seldom excelled; of the landscapes, Nos. 17, 38 and 35 were especially good; there was a spontaneity and "go" about No. 35 which was singularly telling.

INSTITUTE OF SCOTTISH ARCHITECTS.

HOSPITAL PLANNING.

Mr. John Wilson, F.R.I.B.A., Principal Architect to the Scottish Board of Health, addressed the Institute of Scottish Architects last week on the subject of the planning of hospitals, sanatoria, and other public health institutions. Mr. J. A. T. Houston, F.R.I.B.A., presided.

Mr. Wilson said that owing to the rapid change of medical opinion as to the methods of treating disease and the constant upward tendency of standards of sanitation, heating, lighting, ventilation, &c., it was not uncommon for comparatively modern buildings that were still good structurally to fall out of date. For those reasons the architect was now required to design a public health institution on such simple lines that future alterations could be carried out at a minimum of expenditure. So long as the architect could construct a building that would be weatherproof and comfortable, and could be maintained at a moderate cost during the length of its useful life, he was entitled to reduce the initial cost even at the sacrifice of durability.

The City Corporation.

Major H. E. Mathews, F.R.I.B.A., has been elected a member of the Corporation of the City of London for Dowgate Ward, in succession to his father, Mr. J. Douglass Mathews, who retired.

LABOUR-SAVING HOUSE COMPETITION.

We have received the following letters on the Labour-Saving House Competition, the premiated designs in which were illustrated in our last issue.

SIR,—As a competitor, may I add a further criticism to that of Mr. Reginald C. Fry? The points which he enumerates no doubt many have already noticed. The two serving-hatches are good, but an improvement could be made by providing a combined serving and clearing (double-deck) hatch and so remove the copper from the unfortunate position it occupies in the kitchen. Of course, hatches are good "listening posts," especially when in direct communication with the kitchen, and are liable to convey smells and sounds. The maid's room as a passage and a *concierge* is not ideal, and one has to consider privacy for maids. The author of the second premiated design appreciated this. The entrance door with dining-room door and the French windows beyond do not conduce to privacy and comfort. Outside shutters and French casements opening outward must raise difficulties as regards lighting and ventilation, and the slope of the roof does not appear quite the pitch for tiles.

GEORGE COWAN, A.R.I.B.A., M.I.M.Cy.E.
Southsea.

SIR,—In your issue for last Friday Mr. Reginald C. Fry comments on the plans submitted and placed first and second by the three assessors in the competition inaugurated by the *Daily Mail*.

Mr. Fry may be a competent critic inasmuch as he was the winner in the "Ideal Home Competition," held in 1911, but evidently he did not compete in the present competition, for had he done so he would have known that the promoters stipulated that the main entrance to the house should be on the west side. In the plans published the points of the compass were not given, and Mr. Fry has made a wrong assumption as to the aspect. The winner has not placed the principal rooms southwards, but to the east, from which side the kitchen is also lighted. The two walls enclosing the larder are to the northward and eastward, and not, as he has assumed, to the south and east. The den fireplace to which Mr. Fry draws attention is not a coal fire but is an electric fire, so that his objection may not hold good.

Many may agree with Mr. Fry's view as to the situation of the refuse-bin, which would probably become a nuisance. One is also inclined to think Mr. Fry's remark as to the awkward placing of the wash-hand basins in the bedrooms will be upheld.

His opinion that the area of rooms, generally, is too small for a professional class family seems to be so regarded by many. The omission of a pantry will probably meet with much criticism from the housewife who likes, in a rural district especially, to have a place in which she can keep and have control of her stores.

There is so much skill displayed by Mr. Hepworth, both in the plans and the exterior, that one feels he could have produced a house well worth building if the promoters had allowed a larger area to avoid cramping, and it is a great pity that the authorities of the model village at Welwyn, after they had promised to erect the first premiated design, should now alter their decision.

As a competitor, I assumed the size of the family might reasonably consist of parents and six children, possibly two maids (for I do not think one would undertake the situation), and there might be a governess or mother's help, in which case six bedrooms might be the minimum provision. Assuming a visitor this surely must be so, and five bedrooms seem to suggest overcrowding. None of the three premiated designs allows for more than five bedrooms, and the proposed expenditure did not warrant their showing more. The result of the competition evidently leaves the solution unsolved, and a further attempt might be made when the cost of building drops if enterprising journalists will come forward with generous prizes.

EDWARD E. JOLLYE, A.R.I.B.A.

WAR MEMORIAL PAVILION AT ROAN SCHOOL, GREENWICH.

IT is proposed to erect the pavilion illustrated on this page on the school playing fields at Kidbrook as part of the school's memorial to those Old Boys who fell in the war, and a tablet over the central doorway will bear an inscription to that effect. The central portion of the building is given up to a large hall to be used as a lounge and tea-room, with large glass doors opening out on to the verandah. Kitchen and servery are attached. There are five team dressing-rooms, with lavatories and shower baths, and a large store for games material, &c.

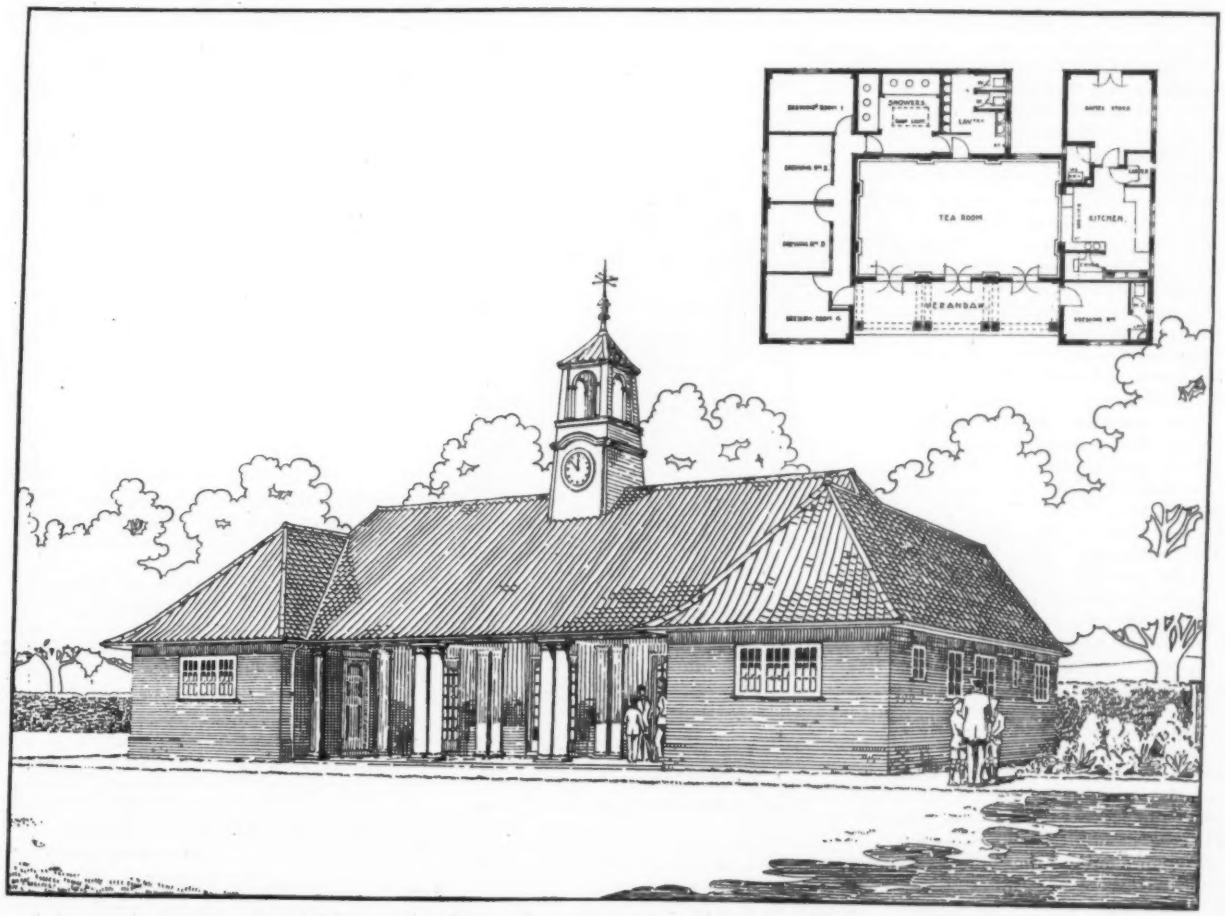
The external walling will be faced with hand-made, sand-faced red bricks. The columns to the verandah will be of concrete faced with cement. It is intended to cover the roof with patent pantiles, and to form large overhanging eaves finished on the underside in plaster. The clock turret will be of timber, with a pantile roof.

The kitchen will be fitted with gas water-boilers, &c., to enable refreshments to be prepared at very short notice. The whole of the building is to be warmed with radiators, and a hot-water supply on the cylinder system is to be installed for the baths and kitchen.

The architects are Messrs. Reid and Bilbow, of 10, Warwick-court, Gray's Inn, W.C.1, and 52, Wellington-street, Woolwich, S.E.18.

Huts in the Parks.

The war-time huts in Tower Gardens, Millbank, have been taken down, and it is expected that the ground will be completely cleared by the end of this week. The War Office annexe in the Embankment Gardens is in process of removal, and the work will probably be finished in about three weeks' time. The Admiralty huts in St. James's Park will take between four and five weeks to clear. Work on the removal of the Passport Office, St. James's Park, has begun.



Proposed Roan School (Greenwich) War Memorial Sports Pavilion. MESSRS. REID & BILBOW, Architects.

BOOK.

Architectural Hygiene; or, Sanitary Science as Applied to Buildings. By SIR BANISTER FLETCHER and MAJOR H. PHILLIPS FLETCHER, D.S.O. 5th edition (revised). London: Sir Isaac Pitman & Sons, Ltd. Price 10s. 6d. net.

The fifth edition of this handbook contains much useful matter presented in a readable form, and is interesting to the householder and house-owner as well as to architects, surveyors, and builders. To the layman and the student it has the advantage of being both brief and comprehensible, since it gives a concise outline of many subjects usually dealt with in the by-laws in the tedious un-English jargon of Government publications. The opening chapters describe the general aspects of sanitary legislation, site and foundations, and the plan in regard to health and convenience. In regard to house planning and the points of the compass, it is noteworthy that the authors have escaped from the ancient tradition that the south aspect is dangerous on account of "feverish and pestilential airs," a theory at one time firmly held in England, and which renders it somewhat difficult to find an old house with dwelling-rooms facing squarely in that direction. Plans and text in the book unite in advising that dwelling-rooms should face south, and it seems that the old idea was not founded on fact. Sanitary construction, drainage, and sanitary fittings are described at some length, and separate chapters are devoted to descriptions of the collection and disposal of refuse and sewage and of typical drainage plans.

Water supply, its pollution and the precautions to be taken to avoid this danger are next dealt with. The different sources of supply and methods of installation are discussed, together with analytical methods of examination, filtration, and water softening. The storage of water by private owners is not very frequently practised in England, and the authors only show a primitive form of underground cistern composed of a single chamber. Tanks for water storage, however, should always be made in duplicate so as to allow of their periodical cleaning without waste of water. In countries where storage water is the sole or important source of supply both tanks are drawn upon until they are half empty, then water is pumped from one and filled into the other, when the empty one can be cleaned at leisure and is ready to receive the next season's supply from rainfall or its share of water imported by the community.

Elaborate figures are given of the composition of air and its impurities, but the quantity of air per person per hour seems to be subject to considerable variation, and although some elaborate formulæ have been devised for regulating the extract and renewal of air supply, what is really required is an analysis of the ventilating arrangements of specific buildings where the air is circulating agreeably and without draughts. Considerable danger attaches to reliance upon theoretical calculation, and elaborate systems have been installed in some public buildings only to be found unpleasant and inadequate in practice. Diagrams and descriptions of fittings for use in ventilation and a table of the extracting power of flues are given in the book, and a separate chapter is devoted to combined ventilation and heating schemes. This chapter is particularly valuable in that it adheres closely to actual practice. The chapter on heating also includes the mention of some ventilating grates and the use of warm-air apparatus. Electricity is not forgotten, although it is confessed that "the cheerful appearance of an open fire may prevent the very extended use of electricity for heating," and "the cost is the great drawback to cooking by electricity, but the time must come when this will be reduced. At 3d. per unit, however, the cost is almost three times as great as ordinary coal for the same purpose, but electrical ironing is said not to be more expensive, besides being so much handier in every way."

A chapter on lighting discusses the subject under the three headings of "Solar Light," "Assisted Natural Lighting," and "Artificial Lighting." Under the heading of "Admission of Solar Light to Buildings," it is stated: "It is found that an odd number of windows in any one wall of an apartment is advantageous as it obviates a central pier, which latter is apt to give a gloomy effect." This is a fundamental principle of architectural composition and generally accepted, but many architectural readers will dissent from the following sentence: "In a long and narrow room more effect is obtained by lighting from the ends than from the sides, as if lighted by windows in the longer walls so very many more shadows would be cast." An equable diffused light is undoubtedly required in the studio or factory, but it is just that contrast of brilliant light with interspersed shadows that makes for the finest architectural effects. An artist more frequently chooses to depict a dark interior penetrated by a ray of light than the lighter but undramatic effect of his own studio, where violent contrasts are carefully avoided. For pleasant effect suitable shadows are as necessary as the contrasting rays of light, and to certain temperaments diffused light causes depression; a long room amply lighted at one end by a bay window seeming to them less cheerful than a room of similar proportion lighted by two or three windows in one of its long sides. Some useful data are added upon the subject of prismatic glass for assisting daylight, and upon the use of gas and electricity.

The question of drainage arises again in connection with the methods of sanitary inspection, and in the chapter upon surveys and reports, where a series of model reports are inserted, descriptive of different classes of property. "The Sanitation of a Country House" and "The Heating, Lighting, and Ventilation to a City Company's Banqueting Hall" are given as the subjects for the last two chapters, which are followed by a comprehensive index.

The book forms an admirable introduction to the subject, and the information it contains can be augmented by any reader by reference to the many authorities quoted in the text. A minor slip occurs on page 8, where flues used for trade purposes are required to be surrounded by brickwork "98 inches thick" instead of the 8½ inches required by the Act. Isolated chimney stacks of great height might require considerable thickness at the base, but it is not specified that these are meant, and in any case their thickness is proportional to their height and cannot be quoted in a single figure.

TO THE GLORY OF GOD
AND IN
GRATEFUL REMEMBRANCE OF
ALL WHO FROM THIS CHURCH
SERVED KING AND COUNTRY
IN THE GREAT WAR 1914-19
AND OF THE FOLLOWING WHO
LAID DOWN THEIR LIVES

War Memorial at Middlesbrough Congregational Church.

From the design of MR. LOUIS JACOB.

[This wall tablet is made of oak, with a copper panel. The tablet was designed by Mr. Louis Jacob, in an honorary capacity, and made by Messrs. E. J. & A. T. Bradford, of 62A, Borough-road, S.E.1.]

DOMESTIC ARCHITECTURE.

THE second of a series of lectures on "Modern Domestic Architecture" was recently delivered at the Manchester University by Sir Lawrence Weaver. These lectures are being arranged by the Institute of Builders (Manchester) and the Manchester Society of Architects. The Lord Mayor of Manchester presided, and mentioned that the builders had given between £4,000 and £5,000 to the University School of Architecture, which was now being reorganised and would prove, he hoped, a first-class institution, thoroughly worthy of the city.

Sir Lawrence Weaver, who chose "Fashion and Style" as his subject, spoke of the way in which English building had developed traditionally up to the middle of the eighteenth century. Then, he said, an unfortunate thing happened: Horace Walpole was born. Walpole started a "fashion" in architecture—a very different thing from a style. He invented "Strawberry-hill Gothic"; he looked at abbeys and tombs, and thought they would make nice houses and coal-scuttles. It was a turn-back from a tradition which was growing, in order to pick up and reopen a tradition which was dead. The Renaissance, indeed, had been a turning-back to an old tradition—to the Classical tradition—but it was a real movement of the human mind, responding to the intellectual development of those days. It changed the current of tradition in this country into something just as real and representative of the human mind of the time as Tudor work had been. But the revival of Gothic in the eighteenth century, going on into the nineteenth and growing in force, was a freak of human fashion which was only developed into something real and representing the emotions of real people when, as a result of the Oxford movement, a number of earnest people came to believe that Gothic architecture was pious and Classical architecture was wicked. Even Robert Adam played about with Gothic. People built Gothic houses in a sober and earnest spirit, feeling that thereby they were somehow doing something to strengthen the Church of England. Of all those who had given a right impetus to the domestic architecture of to-day he regarded Philip Webb and Norman Shaw as the chief. Shaw did much to bring back a measure of new life into the characteristic half-timber work of Sussex and Surrey manor-houses, and afterwards in developing what had been known as "quaint Queen Anne." The two men developed their art from different angles. Shaw had a greater sense of design than Philip Webb; but Webb was a great man because he first of all went back and looked at the matter from the point of view of the workman. He considered what could be done with materials, properly used. He let his design develop from a righteous, sensible use of the materials which he employed. In some buildings he used too many sorts of material, with the result that the design was apt to be fussy; though the student of material afterwards found it interesting and instructive.

The lecturer showed many pictures of houses designed by Webb and Shaw and their disciples; and pointed out that alongside the study of traditional methods there had gone on a study of the technique of old work. Most domestic architecture of to-day was derived either from Webb, characterised by a traditional use of material, or from Norman Shaw, characterised by a care for design. Sir Edwin Lutyens combined the virtues of both schools; his remarkable art was a blend of tradition and invention. A series of pictures tracing the development of Sir Edwin Lutyens' work from its early exuberance to the later period was shown. For all his faithfulness to tradition, said Sir Lawrence, Sir Edwin Lutyens impressed his work with personal quality.

The Institute of Builders.

The annual dinner of the Institute of Builders is to be held at the Hotel Victoria on March 7.

HOUSING AND THE SPECULATIVE BUILDER: PAST AND FUTURE.

By H. R. SELLEY (*Chairman, London House Builders' Association*).

As one of the much-maligned speculative builders for nearly thirty years, I was delighted to read the article by Mr. Manning Robertson, A.R.I.B.A., in your issue for January 27; the admission by him that the builder supplied "what the public expected" is at least just to our much-abused class.

During the past twenty-five years there has been a great change in the methods of house building, and I am bold enough to say that the trade was being raised, in spite of the lack of co-operation of architects and the many unnecessary regulations imposed on house builders by local authorities.

The builder was in many cases his own freeholder. His operations ranged from a house of £2,500 to one of £250 value, and it would be fair to admit that the point at which the builder parted company with the architect was when he reached the small villa type and working-class "weekly" property. The crowding of this class of property, in my opinion, was largely due to the high prices builders paid for land; any position in a suburb of London cost £1,000 to £1,200 per acre, exclusive of lay-out, roads, sewers, etc. It became necessary to get as many houses as possible on the site, ground rents were created, and these were capitalised and sold to our great thrift societies. The "brick and mortar," as we term the leasehold house, was sold at cost or even under; thousands of this class of house were built and sold to occupying owners at 4½d. per cubic foot, and it is clear that at these cut prices there was no margin for architects' fees or costly designs.

The main business was to sell, and sales came to the man who could attract the public. Many tried the severe æsthetic type, but the public were shy, so from force of circumstance the builder reverted to "whimsical barge-board," wattle and daub, or any other feature which added importance to "The Rowans" or "Holly Lodge." In those halcyon days money and materials were cheap and labour was plentiful and willing—so the public expected cheap houses, and got them. The first shock to this happy state of affairs came in 1909, when the mere threat to tax land reduced the capital value of ground rents and raised the price of money for house building. Now we have had the great war, and the result to-day is that with Government securities at 6 to 6½ per cent. it does not pay to create ground rents; money and materials are dear, the output of labour is not up to pre-war standard; all these difficulties have to be met if private enterprise is again to take its place in this great industry. Prices of labour and materials are falling, and I have little doubt that output will improve, so by the end of 1922 we should arrive at something like post-war normal level.

What can the house builder do to provide houses, which all admit are in great demand? He can do his share and relieve the country of a great burden if encouraged and assisted. There are miles of roads laid out around London and in the provinces at the present time, also estates purchased by local authorities, and these could all be developed by the house builder if a well-considered programme were worked out.

Let the private architects and builders get together, put the "12 (3)" scheme of the Housing Act into operation in its true spirit, and then direct their attention to the Small Dwelling Acquisition Act, by which intending purchasers can find the necessary finance, encourage the man with small capital to become the owner of his house, restore confidence in the ownership of property; then we shall have a boom in house building.

The subsidy scheme comes to an end on June 23, and with it the Ministry of Health's modification of by-laws. I agree with Mr. Manning Robertson on the questions of remodelling by-laws and reducing the road-widths, and, may I add, the taking over of houses by local authorities would have a great bearing on housing.

House builders should organise and co-operate with architects; exchange of points of view can be helpful to all, the public taste can be directed in the proper channels; but unless some action is taken I am afraid house building will develop into a State burden, which is the last thing any of us should desire. Let the Government and local authorities go out of business as competitors, and confine their operations to the clearing of slum areas.

Those who wish to elevate the tone of house building should consider the financial aspect. It is no good protesting against the number of houses to the acre if the finance of the ideal lay-out and cost of road, etc., will not permit a small house being built on an expensive site. Had twelve houses to the acre been insisted on during the past twenty-five years the transport of our workers would have been doubled. All these questions will arise again so soon as building becomes an economic proposition.

As chairman of the London House Builders' Association, I know I am speaking for our members when I say we are all anxious to see the tone of the house builder raised, and we shall welcome the assistance which the architectural profession can give us. The housing problem will not be solved by State or municipal enterprise. The true solution will rest with the private builder, assisted by sympathetic treatment from the State, local authorities, idealists, reformers, labour, and the public—all pulling together to provide homes for the people which will not be a burden to the State, but will at the same time house in comfortable and healthy homes a contented people.

Death of a Northampton Builder.

The death occurred at Northampton, on February 3, of Mr. Henry Green, at the age of 76. The deceased was well known as a builder and contractor, and had been responsible for erecting some of the largest buildings and laying out some of the most extensive estates in the town. For a dozen years he was a member of the Town Council.

CONCRETE INSTITUTE.

MEMBERS of the Concrete Institute, and their guests, spent a most enjoyable evening at the Savoy Hotel on Thursday last week, on the occasion of their annual dinner. The gathering was presided over by Mr. E. Fiander Etchells (President), and included in the two-hundred-and-fifty or so present were Lord Riddell, Sir Alfred Mond (Minister of Health), the Very Rev. Dean Inge (Dean of St. Paul's), Sir Henry Maybury (Director of Roads, Ministry of Transport), Sir Henry Tanner, C.B., F.R.I.B.A., Sir Alfred Robbins, Sir Henry Forman, Sir R. Robertson, Dr. Cato Worsfold, M.P., Mr. A. J. Forsdike (Past-President, National Federation of Building Trades' Employers), Mr. Roland B. Chessum (President, London Master Builders' Association), Mr. H. D. Searles-Wood (Vice-President, Royal Institute of British Architects), Mr. G. Topham Forrest (Superintending Architect of the London County Council), Dr. J. S. Owens, Mr. J. Ernest Franck, F.R.I.B.A., Mr. H. Riall Sankey (President of the Institution of Mechanical Engineers), Mr. E. S. Andrews, Professor E. R. Matthews, Mr. F. E. Wentworth-Sheilds, Mr. A. Boyd-Carpenter, M.P., Mr. J. W. Humphreys (Chief Engineer of the London County Council), Mr. H. K. G. Bamber, Dr. Oscar Faber, Mr. G. Corderoy, F.S.I., Mr. Dudley Bartlett, Mr. E. J. Sadgrove, F.R.I.B.A., Mr. Thomas Wallis, Mr. E. J. W. Hider, Mr. W. J. H. Leverton, Mr. Leslie Shingleton, Mr. F. L. Griggs, Mr. W. J. Griggs, Mr. Ellis Marsland, Mr. John Murray, Mr. Alan Graham, A.R.I.B.A., Mr. Heaton Comyn, F.R.I.B.A., Mr. P. M. Fraser, F.R.I.B.A., Mr. H. H. Golding, A.R.I.B.A., Mr. John M. Theobald, F.S.I., Mr. S. Bylander, and Mr. M. G. Kiddy (Secretary).

In proposing the toast of "His Majesty's Ministers," the President specially referred to the work of the Minister of Health, and gave a résumé of the many duties of that office.

SIR ALFRED MOND responded. After referring to the extensive use of concrete for war-time factories, aeroplane sheds, warehouses, etc., he touched on the difficulties which the period of post-war reconstruction imposed on the Government. He claimed that, taking all the difficulties into account, the present Government had performed a stupendous task. It was the only Government in Europe which had continued without change from the time of the Armistice, and he thought that said a great deal for the common sense of the British people, who realised the enormous advantage of allowing those who knew the difficulties from beginning to end to represent them on the councils of the world. The chief requisite for the successful consummation of the peace was patience, for the disturbance caused by the war had been so great that time must be allowed for recovery

LORD RIDDELL made an entertaining speech in proposing the toast of "The Concrete Institute," in the course of which he referred to the energy of the Secretary of the Institute in keeping him well posted in the affairs and history of the Institute since he had accepted the invitation to be present. He complimented the President on the comprehensive nature of his Presidential Address.

In responding, the PRESIDENT referred to the endeavours now being made to obtain a more pleasing finish to concrete surfaces—"If Portland cement were properly applied to a Dutch doll," he said, "it would make it look a veritable Venus!" In conclusion, he gave an entertaining account of modern methods of mixing concrete by hand, in which the regulations and restrictions of trade unions played a prominent part.

MR. J. ERNEST FRANKS proposed the toast of "The Guests," in reply to which DEAN INGE said he did not know much about the uses of concrete, but two of them were gun emplacements and foundations for winter lawn-tennis courts, and he expressed the hope that the activities of the Institute in the future would be more in the direction of the latter than the former.—SIR A. ROBBINS also responded.

HOUSING AND TOWN-PLANNING NOTES.

Northampton Housing Scheme.

Intimation having been received from the Ministry of Health that provided the tender prices are satisfactory the Government will subsidise the building of 200 more houses, the Northampton Town Council has decided to take immediate steps to secure tenders.

Land Values.

In connection with the forthcoming London County Council election, the United Committee for the Taxation of Land Values (11, Tothill-street, S.W. 1) has issued a manifesto urging the reform of the law of rating, chiefly in the direction of rating vacant sites and empty houses and increasing the rates on agricultural land. The present system of rating is characterised as "a hostile tariff against building."

The Shortage of Plasterers.

At a meeting of the Manchester Corporation last week, Councillor Westcott said the Housing Committee had done everything possible to try to speed up the completion of the houses under construction. It had tried to get certain parts of the work done by bricklayers and joiners, although the substituted materials would have cost more money, but although the bricklayers and joiners were quite willing to do the work the plasterers would not consent. Some of the houses had been standing for nearly six months waiting for plasterers. Moreover, the Committee had had to discharge a large number of bricklayers, painters, and other tradesmen engaged on the housing schemes simply because they could not get on for lack of plasterers. In other words, the housing scheme could only proceed at the pace of the plasterers, and the plasterers could only turn out 40 houses a week. If the plasterers had agreed to the bricklayers and joiners doing what they were ready to do, 650 more houses could have been occupied to-day.

Valuations.

At the College of Estate Management, Mr. Frank Hunt, F.S.I., continuing his lectures on the subject of "Valuations," dealt last week with the question of the new principles of compensation introduced by the Acquisition of Land (Assessment of Compensation) Act, 1919. That Act applied to cases where land was acquired compulsorily by a Government department or local or public authority, and, although it was not actually brought into play until compensation was in dispute, the knowledge of its provisions must inevitably have a considerable effect in the negotiations between landowners and acquiring authorities. The basis to be adopted in assessing compensation was what the land might be expected to realise if offered in the open market by a willing seller. The ten per cent. for compulsory sale allowed by custom under the Lands Clauses Act was expressly forbidden. Mr. Hunt then proceeded to discuss in detail the provisions of the Act so far as they affected valuations, explaining, amongst other points, the composition of the assessment tribunal, rules as to special adaptability, reinstatement and compensation for disturbance, and the liability for costs. The lecture concluded with practical illustrations of some of the problems encountered in assessing compensation for land acquired for the construction of new roads.

The National Housing Scheme.

In the course of a recent correspondence, Mr. Henry R. Aldridge (Secretary of the National Housing and Town-Planning Council) asked Sir Charles T. Ruthen (Director-General of Housing) whether it is not possible to state in definite terms the lessons to be learned from the experience of the past three years, and to bring to an end a dispute which, if allowed to drift on indefinitely, may do incalculable harm to the housing movement. In the hope that it may be possible to achieve this purpose Mr. Aldridge outlined the following points as embodying the considered judgment of the leading members of the National Housing and Town-Planning Council:—

(1) The first 100,000 houses completed by the close of 1921 are infinitely better than those built for the working classes before the war. Before the war it was common for urban houses to be built 20, 30, and 40 per acre. In the housing schemes carried into effect by local authorities during the past three years a limit of 12 to the acre has been placed, with the result that each house is provided with a large garden. This amenity has been provided at a minimum of expense. In many cases land has been purchased at less than £150 per acre, or £12 10s. per plot—an amount much less than that paid for house plots before the war. More economical methods of developing sites has enabled the cost of road-making to be reduced by the adoption of new methods of grading roads into arterial, secondary, and residential roads. Concerning the external adornment of the houses, on the whole the new houses are extremely plain and simple. It is sometimes suggested that they should have been built with narrow fronts in order to lessen road cost, but adequate light in rooms is a primary need. The view generally held by local authorities with regard to the height of rooms is that economy in this respect has been carried too far. In the majority of cases the height has been 8 ft., and only on great pressure has the Ministry permitted 8 ft. 6 in. But even if the houses were extravagant in design and lavish in accommodation the main burden of responsibility would not rest on the housing committee of the local authority, nor on the architect. The design of every house was submitted and approved by the Ministry of Health and its architectural and financial advisers before and after the actual cost had been ascertained by tenders from builders. Without the approval of the Ministry the local authorities have not been able to make a single contract. Those concerned can testify to the meticulous care with which items amounting to a few shillings have been rigorously excluded.

(2) The cost of the first hundred thousand houses has been too great. The charge of profiteering in the general sense cannot stand as agains tthe architects. The fees paid to them have been determined according to a definite scale approved by the Ministry. They have applied their skill and energy to this work, and the working-class families in years to come will probably recognise that the bringing in of the architect has been one of the most beneficent features of the present housing policy. But even in the other great sections of the building industry—both operative and employing—it is difficult to establish the charge of profiteering. In 1919 and 1920, and early in 1921, the costs of production were extremely high in all industries. It is possible that in this particular industry the Government might by means of drastic action have kept prices down, but if success had crowned its efforts it would have been a unique example. Throughout the whole of the country there was a kind of vicious circle of determination to demand high prices, and if the charge of profiteering is to be regarded as valid, then it must be brought out against all those engaged in every industry throughout the country.

The real issue, he submitted, is not one of profiteering so much as of the wisdom of the Government and local authorities in pressing forward with their housing schemes in a period of high building costs. During the war certain promises were given concerning social betterment, and there was in 1919 and 1920 a strong desire on the part of the general public to honour the pledges given to those who served their fellow-men. In the uncertain temper of those years the placing aside of housing schemes on the ground of cost would have been regarded as involving a breaking of faith with ex-Service men, and the Government rightly proceeded to redeem its pledges. In these days some hesitancy has been shown in this regard, but there are signs that this is only a passing phase, and that the will of the nation is that the pledge shall be kept. Each week now witnesses the falling of prices towards a post-war normal level. It is already possible to secure tenders for parlour cottages at £500. The period of high building cost has clearly come to an end. When the general public are fully cognisant of the real merits of the houses built, and to be built, under the Housing Act of 1919 we shall begin to be proud of the honourable fulfilment of pledges given in a time of national travail, and redeemed throughout a period of unprecedented economic difficulty.

In the course of his reply, Sir Charles Ruthen said his lifelong interest in the housing question was not in the least likely to wane; and he agreed that those associated with the great national housing movement had reason to be proud of it. His reference to profiteering, he stated, had been entirely misunderstood in many quarters. There was no doubt that many of the schemes were conceived in a spirit of extravagance—no doubt in an honest desire to provide something of great artistic merit. But there was no doubt that in many cases the architect did allow his art to occupy too large a part in his work. The economic aspect did not receive due consideration and enormous work was entailed in eliminating unnecessary provisions. The extent to which economy was effected—a percentage only of excessive provisions in designs—fully justified his claim that economy did not receive due consideration. His desire was to see that architects retained their position in national housing. He appealed to their enlightened self-interest.

Discussing the Government housing scheme with a representative of *The Times*, Mr. Ernest B. Bettham, late Secretary of the Housing Organisation Society and District Inspector of Housing, said the recent charge of profiteering against architects of the housing schemes of local authorities was undeserved. The persons responsible for the *débâcle* were, he said, those who composed the Tudor Walters Committee and formulated the whole of the procedure under which local schemes had strictly to be carried out. It was radical defects in this procedure and a total neglect of the human factor involved in the production of houses that from the beginning doomed the venture to failure. The Tudor Walters Committee and the controlling group at Whitehall into which it merged possessed, through individuals, some of the best genius in the world for town-planning and garden city development and a thorough experience of large commercial building, but it might be questioned whether it comprised a single member who had been more than incidentally familiar with economic building in the drastic sense of that term when applied to rent-controlled housing. The methods chosen and enforced by the Ministry of Health were exactly those which, even under pre-war conditions, would automatically have forced cost to the maximum. They embodied the practice associated with that class of domestic building in which price was a secondary consideration. The procedure was stereotyped even to points of minutest detail. Although architects received the most exact instructions on every point, they heard nothing on the essentail matter that the financial conditions of the time, and the newness and the magnitude of the national scheme, might make necessary a definite break from conventional methods in dealing with buildings and from tradition generally. Instead, convention and tradition were enforced. Builders had to be approached with the ideal plan, ideal specification, and ideal requirements as to quantities and costing, and naturally they responded with "ideal" prices. The common-sense method of securing houses at reasonable cost consisted of going to the builder in the first place. Directly permission was given to try this method in the region in which Mr. Bettham was stationed, he was able to reduce prices 25 per cent. But this did not occur till last year, and was then allowed only as a measure of desperation, and for a beginning confined to rural schemes.

THE BUILDING TRADE.

THE OUTLOOK IN THE BUILDING INDUSTRY.

WE have received a communication from Mr. G. H. Trollope, of Messrs. George Trollope & Sons, the well-known London builders, in the course of which he says:—

"The general consensus of opinion in the articles and correspondence you have already published on the future of the building industry seems to me to be so correct that I can hardly add anything to what has already been expressed which would tend to make the situation clearer. I think the position has been most ably stated by Mr. Fred. Higgs in the letter you publish in last week's issue of *The Builder*, and this position may be summed up by stating that although there may be some slight indication of improvement, and that there is a prevalent hopeful feeling, there is in my opinion not likely to be any considerable extension of trade until three things happen:—

"(1) Wages must be reduced to a more reasonable level.

"(2) Workmen must give a better output.

"(3) The cost of materials must be largely reduced.

"When these things happen, and not before, there will be plenty of trade to occupy the industry to its fullest extent."

THE PROVIDENT INSTITUTION OF BUILDERS' FOREMEN AND CLERKS OF WORKS.

Annual Dinner.

As is usual on the occasion of the annual dinner of the Provident Institution of Builders' Foremen and Clerks of Works (held last Saturday) the King's Hall at the Holborn Restaurant was taxed to its greatest capacity, and many of those present had to be accommodated in the gallery. Mr. G. Perry Nash presided over the gathering, which included Messrs. Frederick Shingleton (President, Institute of Builders), Roland B. Chessum (President, London Master Builders' Association), A. B. H. Colls, William Woodward, F.R.I.B.A., E. J. Sadgrove, F.R.I.B.A., Guy Church, F.R.I.B.A., P. D. Hepworth, A.R.I.B.A., E. J. Brown (Director, London Master Builders' Association), S. J. Dicksee, H. W. Horner, H. A. A. Gate, F.S.I., G. G. Wornum, A.R.I.B.A., Louis de Soissons, A.R.I.B.A., J. E. Drower, F.S.I., H. A. Grover, P. Gleed, F.S.I., S. A. Paine, Q.S.A., Ben Carter, A. Ritchie, E. Carter, Stanley Nash, C. Harman, J. D. Fairbarn, S. Shingleton, Bruce H. Chessum, Leslie Shingleton, A. H. Adamson, and W. J. Rudderham (Secretary).

In proposing the toast of "The Institution," the PRESIDENT spoke in eloquent terms of the work carried on since 1842 by the granting of pensions to the aged, afflicted, and infirm members, and their widows and orphans. During the past year the membership had increased by one-third. Forty-five per cent. of the donations were received from London builders.

MR. F. J. DEXTER responded to the toast, and thanked the chairman for presiding.

The toast of "The Architects and Surveyors" was proposed by MR. E. J. BROWN, who said builders felt that they were better friends with the architects to-day than ever before. He wished the surveyors every success in their great effort to standardise quantities, a wish which everyone present heartily applauded.

MR. WILLIAM WOODWARD responded for the architects, and thanked Mrs. Searchfield, wife of the Honorary Secretary of the Institution, for the considerable interest she took in the annual function, and in certain ways contributed to its success. He also referred to the great loss sustained by all connected with building by the death of Mr. Ernest Newton, R.A., whom he described as one of the greatest type of English gentlemen.

MR. ARMYTAGE GATE responded for the surveyors.

The toast of "The Builders and Contractors" was proposed by MR. ALEX. RITCHIE, and responded to by MR. ROLAND B. CHESSUM.

A presentation was then made by the CHAIRMAN to Mrs. Searchfield, and afterwards MR. FREDERICK SHINGLETON proposed a toast to the visitors. This was responded to by MR. ARCHIE COLLS in place of Mr. J. C. Nicholson, J.P., who was unable to attend.

The President was enthusiastically toasted with musical honours in response to the proposal of Mr. BEN CARTER.

MR. C. E. DUNKIN proposed a toast to the Governor, Trustees, and Subscribers, and MR. ERIC BURT responded in place of his brother, Mr. G. M. Burt, who was unable to be present.

The last toast was to the Honorary Secretary, Mr. Ernest Searchfield. This was proposed by the PRESIDENT, who spoke in high terms of the way in which Mr. Searchfield had carried on the work he had undertaken.

It was announced that during 1921 the Institution's income amounted to £1,534, and its expenditure, including £957 paid in pensions and grants, £1,204. The accumulated funds amount to nearly £9,900.

NEW BUILDINGS IN LONDON.

PUTNEY.—The premises occupying Nos. 111-115, High-street, comprising two shops and assembly rooms, are now being reconstructed with a view to converting them into a new branch for Messrs. W. H. Smith & Son, of Strand House, Portugal-street, W.C.2. It is understood the ground floor will be fitted as a retail shop, and the upper floor used for the wholesale trade. Brick construction will be used for fireproofing the steel frame supplied by Messrs. Measures Bros. (1911), Ltd., of 105, Southwark-street, S.E.1. The floors will be constructed with Messrs. Mark Fawcett's "Monlithcrete"—the surface being finished with wood blocks. The architect is Mr. A. H. Lister, of 18, Adam-street, Strand, W.C.2. The builders are Messrs. T. H. Adamson & Sons, of 145, High-street, who are also responsible for all the fitting work, etc.

Further to the report in these columns on November 18, with reference to Messrs. W. H. Cullen's new provision stores at 39-43, High-street, it is now understood that a new garage will shortly be erected at the rear of these premises. The new building will have an area of about 1,750 feet super. Full particulars are obtainable from Mr. W. H. Cullen at the firm's head office, 32, Earl-street, E.C.2.

EAST CENTRAL.—Considerable extensions to the works of Messrs. Bovril, Ltd., of 152, Old-street, are now in progress. The architects are Messrs. Lanchester, Rickards & Lucas, of 19, Bedford-square, W.C.1, whose plans show a new wing to be added to the elevation in Banner-street, which will provide a total additional floor space of 6,400 ft. super. The new building is to have seven floors, including basement and sub-basement. A number of boilers will be installed in the basement. The builders are Messrs. Rice & Son, of 15, Stockwell-road, S.W.9. Brick construction will be used to fireproof the steel frame, supplied by Messrs. Sands, and the floors will be of reinforced concrete. The various sub-contracts are now being considered, but nothing definite has been settled. The windows will be made by the builders' own joiners. As the new premises are urgently needed, it is hoped that the additions may be completed in about three months.

HOLBORN.—A block of modern shops and offices will shortly be erected on the site occupying Nos. 24 & 25, High Holborn. The sole agents are Messrs. Buckmaster, Webber and Williams, F.S.I., F.A.I., from whom all particulars are obtainable. No contracts have yet been placed, but further details will be forthcoming at an early date.

FINSBURY PARK.—Two lock-up shops will shortly be erected on the site occupying Nos. 240A and 240B, Seven Sisters'-road. The sole agents are Messrs. Wainwright & Co., of 232, Seven Sisters'-road, who it is understood propose to let the site to a suitable tenant, when building operations will be commenced. No contracts have yet been placed.

LAW REPORTS.

London Building Act.

At the Mansion House last week, the owners of No. 28, Fish-street-hill, E.C., were summoned for failing to comply with an order to take down the building to first-floor level, it having been certified as dangerous.

Describing its condition, Mr. Martin L. Saunders, Surveyor under the London Building Act, said the upper floors were empty, the lower part being used as a licensed house. A certain amount of shoring had been done by the owners, but nothing could be effective—it must come down to first-floor level. The piers were badly split and in danger of collapsing, and the girders and columns were 4½ in. out of the perpendicular. Should there be a fall of snow or a high wind, the danger would be very great. Nothing had been done since he obtained the certificate on January 14. There were five shores, protruding on to the public way, which caused an obstruction at this busy spot.

A surveyor for the owners stated the damage was the basis of a High Court action.

The Lord Mayor made an order forthwith with costs.

At the Mansion House, a builder was recently summoned for contravening the Building Act (Metropolitan) by failing to give notice to the District Surveyor of certain operations being carried out at a building in Queen Victoria-street, before commencing the work.

It was stated that considerable structural and internal alterations had been made at the premises in question before it was discovered that the necessary notice had not been given, and as the work done contravened the Act in three very important particulars it would all have to be undone. This entailed a considerable loss.

The builder concerned expressed his regret and said he had had little experience of City building work.

Alderman Sir Charles Wakefield said he should have thought the first thing a builder would do would be to get the sanction of the local authority for the work he proposed to do. Defendant would be fined 40s.

Building By-Laws.

It is reported that a Southampton builder has been ordered to pay continuing penalties inflicted for non-compliance with the Corporation building by-laws amounting in the aggregate to £4,900 within one month, or, failing distress, to go to prison for six months.

The Industrial Council for the Building Industry.

The next quarterly meeting of the Industrial Council for the Building Industry is to be held at Montague House, Whitehall, London, to-day (February 10); and will be a one-day conference only, instead of the usual two days. In addition to the usual business, reports of the Safety and Welfare Committee on (*a*) silicosis among stonemasons; and (*b*) the draft regulations for building operations and wood-working machinery are to be considered. The conference begins at 10.30 a.m.

TRADE NEWS.

Messrs. Thomas Glenister, Ltd., of Temple Chair and Upholstery Works, High Wycombe, are enlarging their works, and the first contract for the work has been let.

Messrs. Wailes Dove Bitumastic, Ltd., at their recent annual meeting, added the following to the board of directors, namely, Mr. Percy Hedley, engineer, St. James's Court, London; and Mr. Thomas Macdonald, son of Mr. Charles Macdonald, who has been associated with the company for many years past.

Messrs. Thomas Faldo & Co., Ltd., of Windsor House, Kingsway, W.C.2, have secured the contract for the asphalte work in connection with the large contract for the erection of grain elevators in South Africa, which, we are informed, will be one of the largest contracts ever placed for asphalte. The contract was open to world-wide competition.

The Express Lift Co., Ltd., of Greycoat-street Works, Westminster, S.W. 1, has issued a booklet of 44 pages in which the installation of twenty-five lifts at Magnet House, Kingsway, W.C., is fully described and illustrated. This installation is claimed to be one of the most up-to-date of its kind in the world, and the publication should be of considerable interest to all concerned with lifts in modern buildings.

Mr. H. Gibson reports that there was considerable activity during the past year in the three estates controlled from Baker-street Station, comprising the Metropolitan Railway Surplus Lands (the Metropolitan Railway Country Estates, Ltd., and the Wembley Park Estate Co., Ltd.) the total sales for the year amounting to £199,568, made up as follows:—Sales of land, £84,048; sales of houses, £86,302; sales of ground rents, £4,468; and shops and business premises, £24,750.

A Builder's Estate.

The late Mr. John A. Barnett, building contractor, of Halifax, who died on November 12 last, left estate valued at £5,047.

Mr. John Cromie, builder, of Bootle and Wallasey, left estate valued at £27,845.

New Home for Mr. Lloyd George.

Mr. Philip Tilden, of 3, Pelham-crescent, S.W. 7, the architect of the new home for the Premier, asks us to state that the work has already been given out to the various contractors.

Institution of Heating and Ventilating Engineers.

The Institution of Heating and Ventilating Engineers has removed to No. 38, Victoria-street, S.W.1, to which address all communications should now be sent.

Contract *v.* Direct Labour.

It is reported that the Monmouthshire County Council Small Holdings Committee has decided to give notice to the Federation of Building Trades Operatives of its intention to terminate the agreement between the parties upon the completion of the farm buildings now in course of erection. The Committee is to consider the question of building by direct labour and to compare the cost between building by contract and direct labour.

Wages in the Electrical Industry.

A conference between the National Federated Electrical Association and the Electrical Trades' Union has agreed that, as from the second pay-day in February, the rates of wages shall be as follows: Grade "A," 2s. 1½d. per hour (including travelling allowances); Grade "B," 1s. 10½d.; Grade "C," 1s. 9d.; and Grade "D," 1s. 7½d. These rates will hold good up to the first pay-day in June next. The town of Cambridge has now been placed in Grade "C"; Kent (outside the London area) and Tunbridge Wells, with the exception of Chatham, Faversham, Sheerness, Gravesend, Crayford, Sittingbourne, Rochester, Dartford, and Maidstone, have been transferred to Grade "D"; and Londonderry has been placed in Grade "C."

RATES OF WAGES IN THE BUILDING TRADE.

The following are the rates of wages in the building trade in England and Wales. Every endeavour is made to ensure accuracy, but we cannot be responsible for errors that may occur:—

	Masons.	Bricklayers.	Carpenters, Joiners.	Plasterers.	Slaters.	Plumbers.	Painters.	Masons' Labourers.	Bricklayers' Labourers.	Plasterers' Labourers.
Aberdare	2/0	2/0	2/0	2/0	2/0	2/0	2/0		1/7	
Accrington	2/0	2/0	2/0	2/0	2/0	2/0	2/0		1/7	
Altrincham	2/0	2/0	2/0	2/0	2/0	2/0	2/0		1/7	
Ashton-under-Lyne	2/0	2/0	2/0	2/0	2/0	2/0	2/0		1/7	
Barnsley	2/0	2/0	2/0	2/0	2/0	2/0	2/0		1/7	
Barrow-in-Furness	2/0	2/0	2/0	2/0	2/0	2/0	2/0		1/7	
Barry	2/0	2/0	2/0	2/0	2/0	2/0	2/0		1/7	
Bath	1/9	1/9	1/9	1/9	1/9	1/9	1/9		1/4½	
Bedford	1/8	1/8	1/8	1/8	1/8	1/8	1/8		1/3½	
Birkenhead	2/2	2/2	2/2	2/2	2/2	2/2	2/2		1/9½	
Birmingham	2/0	2/0	2/0	2/0	2/0	2/0	2/0		1/7	
Bishop Auckland	2/0	2/0	2/0	2/0	2/0	2/0	2/0		1/7	
Blackburn	2/0	2/0	2/0	2/0	2/0	2/0	2/0		1/7	
Blackpool	2/0	2/0	2/0	2/0	2/0	2/0	2/0		1/7	
Bolton	2/0	2/0	2/0	2/0	2/0	2/0	2/0		1/7	
Bournemouth	1/8	1/8	1/8	1/8	1/8	1/8	1/8		1/3½	
Bradford	2/0	2/0	2/0	2/0	2/0	2/0	2/0		1/7	
Bridgwater	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½		1/2½	
Brighton	1/8	1/8	1/8	1/8	1/8	1/8	1/8		1/3½	
Bristol	2/0	2/0	2/0	2/0	2/0	2/0	2/0		1/7	
Burnley	2/0	2/0	2/0	2/0	2/0	2/0	2/0		1/7	
Burton-on-Trent	1/10½	1/10½	1/10½	1/10½	1/10½	1/10½	1/10½		1/5½	
Bury	2/0	2/0	2/0	2/0	2/0	2/0	2/0		1/7	
Cambridge	1/8	1/8	1/8	1/8	1/8	1/8	1/8		1/3½	
Cardiff	2/0	2/0	2/0	2/0	2/0	2/0	2/0		1/7	
Chatham	1/7	1/7	1/7	1/7	1/7	1/7	1/7		1/3	
Chelmsford	1/8	1/8	1/8	1/8	1/8	1/8	1/8		1/3½	
Cheltenham	1/9	1/9	1/9	1/9	1/9	1/9	1/9		1/4½	
Chester	2/0	2/0	2/0	2/0	2/0	2/0	2/0		1/7	
Chesterfield	2/0	2/0	2/0	2/0	2/0	2/0	2/0		1/7	
Colchester	1/8	1/8	1/8	1/8	1/8	1/8	1/8		1/3½	
Coventry	2/0	2/0	2/0	2/0	2/0	2/0	2/0		1/7	
Crewe	1/10½	1/10½	1/10½	1/10½	1/10½	1/10½	1/10½		1/5½	
Darlington	2/0	2/0	2/0	2/0	2/0	2/0	2/0		1/7	
Derby	2/0	2/0	2/0	2/0	2/0	2/0	2/0		1/7	
Doncaster	2/0	2/0	2/0	2/0	2/0	2/0	2/0		1/7	
Dudley	1/10½	1/10½	1/10½	1/10½	1/10½	1/10½	1/10½		1/5½	
Durham	2/0	2/0	2/0	2/0	2/0	2/0	2/0		1/7	
East Glam. and Mon. Valleys	2/0	2/0	2/0	2/0	2/0	2/0	2/0		1/7	
Exeter	1/8	1/8	1/8	1/8	1/8	1/8	1/7		1/3½	
Folkestone	1/7	1/7	1/7	1/7	1/7	1/7	1/7		1/3	
Gloucester	1/9	1/9	1/9	1/9	1/9	1/9	1/8		1/4½	
Grantham	1/10½	1/10½	1/10½	1/10½	1/10½	1/10½	1/10½		1/5½	
Grays	2/0	2/0	2/0	2/0	2/0	2/0½	1/11		1/7	
Grimsby	2/0	2/0	2/0	2/0	2/0	2/0	2/0		1/7	
Great Yarmouth	1/7	1/7	1/7	1/7	1/7	1/7	1/7		1/3	
Guildford	1/8	1/8	1/8	1/8	1/8	1/8	1/8		1/3½	
Halifax	2/0	2/0	2/0	2/0	2/0	2/0	2/0		1/7	
Harrogate	2/0	2/0	2/0	2/0	2/0	2/0	2/0		1/7	
Hartlepools	2/0	2/0	2/0	2/0	2/0	2/0	2/0		1/7	
Hastings	1/7	1/7	1/7	1/7	1/7	1/7	1/7		1/3	
Hereford	1/9	1/9	1/9	1/9	1/9	1/9	1/8		1/4½	
Huddersfield	2/0	2/0	2/0	2/0	2/0	2/0	2/0		1/7	
Hull	2/0	2/0	2/0	2/0	2/0	2/0	2/0		1/7	
Ipswich	1/8	1/8	1/8	1/8	1/8	1/8	1/8		1/3½	
Lancaster	2/0	2/0	2/0	2/0	2/0	2/0	2/0		1/7	
Leamington Spa	1/10½	1/10½	1/10½	1/10½	1/10½	1/10½	1/10½		1/5½	
Leeds	2/0	2/0	2/0	2/0	2/0	2/-	2/0		1/7	
Leicester	2/0	2/0	2/0	2/0	2/0	2/0	2/0		1/7	
Lichfield	1/10½	1/10½	1/10½	1/10½	1/10½	1/10½	1/10½		1/5½	
Lincoln	2/0	2/0	2/0	2/0	2/0	2/0	2/0		1/7	
Liverpool	2/2	2/2	2/2	2/2	2/2	2/2	2/2		1/9½	
Llanelly	2/0	2/0	2/0	2/0	2/0	2/0	2/0		1/7	
London	2/0	2/0	2/0	2/0	2/0	2/0½	1/11		1/7	
Loughborough	2/0	2/0	2/0	2/0	2/0	2/0	2/0		1/7	
Luton	1/8	1/8	1/8	1/8	1/8	1/8	1/8		1/3½	
Maidstone	1/7	1/7	1/7	1/7	1/7	1/7	1/7		1/3	
Manchester	2/0	2/0	2/0	2/0	2/0	2/0	2/0		1/7	
Mansfield	2/0	2/0	2/0	2/0	2/0	2/0	2/0		1/7	
Merthyr Tydfil	2/0	2/0	2/0	2/0	2/0	2/0	2/0		1/7	
Middlesbrough	2/0	2/0	2/0	2/0	2/0	2/0	2/0		1/7	
Newcastle-on-Tyne	2/0	2/0	2/0	2/0	2/0	2/0	2/0		1/7	
Newport, Mon.	2/0	2/0	2/0	2/0	2/0	2/0	2/0		1/7	
Northampton	1/10½	1/10½	1/10½	1/10½	1/10½	1/10½	1/10½		1/5½	
Norwich	1/8	1/8	1/8	1/8	1/8	1/8	1/8		1/3½	
Nottingham	2/0	2/0	2/0	2/0	2/0	2/0	2/0		1/7	
Oakham	1/9	1/9	1/9	1/9	1/9	1/9	1/9		1/4½	
Oldham	2/0	2/0	2/0	2/0	2/0	2/0	2/0		1/7	
Oxford	1/8	1/8	1/8	1/8	1/8	1/8	1/8		1/3½	
Plymouth	1/10	1/10	1/10	1/10	1/10	1/10	1/9		1/5½	
Pontypridd	2/0	2/0	2/0	2/0	2/0	2/0	2/0		1/7	
Portsmouth	1/8	1/8	1/8	1/8	1/8	1/8	1/8		1/3½	
Preston	2/0	2/0	2/0	2/0	2/0	2/0	2/0		1/7	
Reading	1/8	1/8	1/8	1/8	1/8	1/8	1/8		1/3½	
Rochdale	2/0	2/0	2/0	2/0	2/0	2/0	2/0		1/7	
Rochester	1/7	1/7	1/7	1/7	1/7	1/7	1/7		1/3	
Rugby	1/10½	1/10½	1/10½	1/10½	1/10½	1/10½	1/10½		1/5½	
St. Albans	1/8	1/8	1/8	1/8	1/8	1/8	1/8		1/3½	
St. Helen's	2/0	2/0	2/0	2/0	2/0	2/0	2/0		1/7	
Scarborough	1/10½	1/10½	1/10½	1/10½	1/10½	1/10½	1/10½		1/5½	
Sheffield	2/0	2/0	2/0	2/0	2/0	2/0	2/0		1/7	
Shrewsbury	1/10½	1/10½	1/10½	1/10½	1/10½	1/10½	1/10½		1/5½	
Southampton	1/8	1/8	1/8	1/8	1/8	1/8	1/8		1/3½	
Southend-on-Sea	1/8	1/8	1/8	1/8	1/8	1/8	1/8		1/3½	
Southport	2/0	2/0	2/0	2/0	2/0	2/0	2/0		1/7	
South Shields	2/0	2/0	2/0	2/0	2/0	2/0	2/0		1/7	
Stockport	2/0	2/0	2/0	2/0	2/0	2/0	2/0		1/7	
Stockton-on-Tees	2/0	2/0	2/0	2/0	2/0	2/0	2/0		1/7	
Stoke-on-Trent	2/0	2/0	2/0	2/0	2/0	1/11	2/0		1/7	
Stroud	1/8	1/8	1/8	1/8	1/8	1/8	1/7½		1/3½	
Sunderland	2/0	2/0	2/0	2/0	2/0	2/0	2/0		1/7	
Swansea	2/0	2/0	2/0	2/0	2/0	2/0	2/0		1/7	
Taunton	1/8	1/8	1/8	1/8	1/8	1/8	1/8		1/-	
Torquay	1/8	1/8	1/8	1/8	1/8	1/8	1/8		1/3½	
Tunbridge Wells	1/8	1/8	1/8	1/8	1/8	1/8	1/8		1/3½	
Wakefield	2/0	2/0	2/0	2/0	2/0	2/0	2/0		1/7	
Walsall	1/10½	1/10½	1/10½	1/10½	1/10½	1/10½	1/10½		1/5½	
Warrington	2/0	2/0	2/0	2/0	2/0	2/0	2/0		1/7	
West Bromwich	2/0	2/0	2/0	2/0	2/0	2/0	2/0		1/7	
Wigan	2/0	2/0	2/0	2/0	2/0	2/0	2/0		1/7	
Windsor	1/8	1/8	1/8	1/8	1/8	1/8	1/8		1/3½	
Wolverhampton	2/0	2/0	2/0	2/0	2/0	2/0	2/0		1/7	
Worcester	1/10½	1/10½	1/10½	1/10½	1/10½	1/10½	1/10½		1/5½	
		1/10½	1/10½	1/10½	1/10½	1/10½	1/10½		1/5½	

(For rates of wages in the Building Trade in Scotland, see page 241.)

CONTRACTS, COMPETITIONS, &c.

For some contracts still open, but not included in this List, see previous issues. Those with an asterisk are advertised in this number. Certain conditions beyond those given in the following information are imposed in some cases, such as that advertisers do not bind themselves to accept the lowest or any tender; that a fair wages clause shall be observed; that no allowance will be made for tenders; and that deposits are returned on receipt of a bona-fide tender unless stated to the contrary.

The date given at the commencement of each paragraph is the latest date when the tender, or the names of those willing to submit tenders, may be sent in; the name and address at the end is the person from whom or place where quantities, forms of tender, &c., may be obtained.

BUILDING AND PAINTING.

FEBRUARY 11.—**Edinburgh.**—OFFICE, &C.—(1) Provision of ladies' lavatory at Royal Scottish Museum, Edinburgh; (2) Provision of a public office at South Side Sorting Office, Edinburgh for H.M. Office of Works. Architect, H.M. Office of Works, 4-5, Drumsheugh-gardens, Edinburgh. Deposit £1 1s. each contract.

FEBRUARY 11.—**Salford.**—SUB-STATION.—Erection of a small sub-station at Heaton Park, for the T.C. Borough Electrical Engineer, Frederick-road, Salford.

FEBRUARY 13.—**Bury.**—PAINTING.—For painting, &c., at Gas Offices. Mr. H. Simmonds, Engineer Gasworks, Elton, Bury.

FEBRUARY 13.—**Edinburgh.**—WALLS, &C.—Repair and rebuilding of walls, erection of new wall, and the pointing of north face of wall at main roadway at proposed public park, Keith-crescent, Blackhall, for the T.C. Mr. James A. Williamson, City Architect, Public Works Office, City Chambers, Edinburgh.

FEBRUARY 13.—**Exeter.**—HOUSES.—Erection of 20 houses on Buddle-lane site, for the T.C. City Architect, 6, Southernhay West, Exeter. Deposit £2.

FEBRUARY 13.—**Girsby.**—SCHOOL.—Erection of a new Council School to accommodate 40 children at Girsby, for the North Riding of Yorkshire C.C. Mr. J. C. Wrigley, County Education Offices, Northallerton.

FEBRUARY 13.—**Loughborough.**—WALL—Re-erection of the stone wall adjoining the Rectory Grounds and Steeple-row, for the T.C. Mr. W. Granger, Acting Borough Surveyor, Town Hall, Loughborough.

FEBRUARY 13.—**Manchester.**—BUILDING WORK.—(1) Mason and joiner work in connection with ambulance garage; (2) painter work, for the T.C. Mr. J. A. Williamson, City Architect, City Chambers, Manchester.

FEBRUARY 13.—**Rawcliffe.**—PAINTING.—External painting at Rawcliffe Hall Institution, Rawcliffe, near Goole, for the West Riding Mental Deficiency Act Committee. West Riding Architect, County Hall, Wakefield.

FEBRUARY 13.—**Sheffield.**—EXCAVATIONS.—Preliminary works (excavations, foundations, &c.) in connection with a new telephone exchange at Sheffield, for the Commissioners of H.M. Office of Works. Contracts Branch, King Charles-street, S.W.1. Deposit £1 1s.

FEBRUARY 13.—**Stornoway.**—CONVERSION.—Converting the Imperial Hotel, Stornoway, into a girls' hostel. Messrs. A. Maitland & Sons, Architects, Stornoway.

FEBRUARY 14.—**Bootle.**—MASONRY, &C.—Supply and erection of a stone base and pedestal and the fixing of bronze figures in connection with the War Memorial, Stanley Gardens, Bootle, for the County Boro' War Memorial Committee. Mr. B. J. Wolfinden, Boro' Engineer and Surveyor, Town Hall, Bootle.

FEBRUARY 14.—**Braintree.**—HOUSES.—Erection of eight cottages at Great Coggeshall; 4 at Little Coggeshall: and 6 at Panfield, for the R.D.C. Mr. A. R. Dannatt, architect, Great-square, Braintree. Deposit £1 1s.

FEBRUARY 14.—**Consett.**—HOUSES.—Erection of 48 houses at the Housing Area, Grove-farm, for the U.D.C. Mr. T. Hutton, Surveyor, Council Offices, Consett. Deposit £3 3s.

FEBRUARY 14.—**Eastleigh and Bishopstoke.**—HOUSES.—Erection of 10 houses, for the U.D.C. Mr. C. J. Hair, architect, 23, Portland Chambers, Southampton.

✱FEBRUARY 14.—**Middlesbrough.**—WAR MEMORIAL.—Erection and complet on of local war memorial of stone and granite adjoin ng the Albert Park. Messrs. Brierley & Rutherford, Architects, 13, Lendal, York. Deposit £2 2s.

FEBRUARY 14.—**Various Places.**—PAINTING.—Painting the station buildings, &c. (1) West Hartlepool Station, Goods, and Engine Sheds, (2) Haswell Station, to Hartlepool, including Thornley Branch, and Easington to Hart, for the North-Eastern Railway Co. Mr. W. D. Rudgard, District Engineer, Bishop Auckland. Deposit £2 each contract.

FEBRUARY 14.—**Various Places.**—PAINTING.—Painting the station buildings, &c. (1) Pelaw Junction to South Shields exclusive of Pelaw Station, (2) Pelaw Junction to Sunderland exclusive of Pelaw and Sunderland Stations, (3) Consett Branch, Relly Mill Signal Box to Consett Junction and Swalwell, for the North-Eastern Railway Co. Mr. F. E. Harrison, District Engineer, Forth Banks, Newcastle. Deposit £2 each contract.

FEBRUARY 14.—**Welwyn.**—HOUSES.—Erection of 50 cottages for the R.D.C. Mr. H. G. Cherry, architect, 97, Jermyn-street, S.W. Deposit £2 2s.

FEBRUARY 15.—**Kent.**—VARIOUS WORKS.—(*a*) Adaptations and repairs to farm house, cottages, and farm buildings at Brockton Farm, Charing Heath; (*b*) sundry repairs; &c., to cottage and farm buildings at Payne Land Farm, Frittenden; (*c*) erecting a new shed and sundry repairs to cottage and farm buildings at Johnson's Farm, Ash-next-Ridley; (*d*) sundry repairs to cottages and farm buildings at Deerton-street, Teynham. County Land Agent, Sessions House, Maidstone.

FEBRUARY 15.—**Leeds.**—BUILDINGS.—Erection of workshops, foreman's, and timekeeper's office, &c., at sewage disposal works at Thorpe, for the T.C. Mr. Geo. A. Hart, engineer, Pearl Chambers, East-parade, Leeds. Deposit, £1.

FEBRUARY 15.—**Leeds.**—ALTERATIONS.—Alterations at Shadwell Industrial School, for the T.C. Architect's Section, Education Offices, Calverley-street, Leeds.

FEBRUARY 15.—**London.**—ROOFING.—Re-roofing of portico at the National Gallery, London, for The Commissioners of H.M. Office of Works. Contracts Branch, King Charles-street, London, S.W.1. Deposit £1 1s.

FEBRUARY 15.—**Manchester.**—BUILDING WORK.—For building work at the Elm-street Cold Stores, for the T.C. General Superintendent, Markets Department, Town Hall, Manchester.

FEBRUARY 15.—**Portsmouth.**—ADDITIONS.—For demolition of old buildings and additions at Dull Hill, St. Paul's-road, for the Territorial Army Association. Mr. A. E. Cogswell, architect, Prudential Buildings, Portsmouth.

FEBRUARY 15.—**Rochdale.**—PAINTING.—Painting the interior of the Education Office. J. E. Holden, Secretary, Rochdale.

FEBRUARY 16.—**Huddersfield.**—ALTERATIONS.—For alterations to "Miners' Arms," Fartown. Messrs. Joseph Berry & Sons, architects, 3, Market-place, Huddersfield.

FEBRUARY 16.—**Truro.**—ADDITIONS.—Alterations and additions at Truro County Police Station, for the Cornwall C.C. Mr. L. D. Thompson, County Surveyor, County Hall, Truro.

FEBRUARY 17.—**Conisborough.**—HOUSES.—Erection of 32 houses, for the U.D.C. Mr. H. Thirlwall, Surveyor, Church-street, Conisborough. Deposit £2.

FEBRUARY 17.—**Manchester.**—SUB-STATION.—Builders' work, steelwork, &c., of a sub-station. Mr. F. E. Hughes, Secretary, Electricity Department, Town Hall, Manchester. Deposit, £2 2s.

FEBRUARY 17.—**Nottingham.**—HOUSES.—Erection of a further 12 parlour-type houses, on the Highbury-road, Bulwell, estate, for the T.C. Housing Department, Trinity-square, Nottingham. Deposit, £1 1s.

FEBRUARY 17.—**Scotby.**—HOUSES.—For two houses at Scotby. Mr. H. H. Hodgkinson, architect, 64, Lowther-street, Carlisle.

FEBRUARY 18.—**Blandford.**—SWIMMING BATH.—Erection of a swimming bath, for the T.C. Mr. R. W. Ashman, Borough Surveyor, Blandford. Deposit £2.

✱FEBRUARY 18.—**East Sussex.**—BUILDING AND REPAIRS.—Work at Park Pale Farm, Glottenham Estate, Parish of Mountfield, near Robertsbridge, Sussex. (1) Brick-built cottage, (2) repairs and alterations to existing buildings, (3) new farm buildings, for the East Sussex Agricultural Committee. Mr. R. H. B. Jesse, Director of Agriculture, Mountfield House, Lewes. Deposit £2 2s.

FEBRUARY 18.—**Huddersfield.**—WAR MEMORIAL.—Erection of Huddersfield War Memorial. Mr. H. Sutcliffe, Borough Architect, 1, Peel-street, Huddersfield. Deposit, £5 5s.

FEBRUARY 18.—**Various Places.**—PAINTING.—Painting at the undermentioned places: (1) Great Howard-street and South Docks Goods Stations, and Liverpool to Kirkdale and Bank Hall; (2) Aintree to Lostock Hall, &c.; (3) Daisy Field Junction to Padiham Junction; (4) Bolton to Blackburn, &c.; (5) Bolton and Wigan Engine Sheds; (6) Bacup, Accrington, Rose Grove, and Colne Engine Sheds, and Carriage Sheds at Colne; (7) Victoria Station, Manchester, and Manchester Loop Line; (8) Hollinwood Branch; (9) Halifax Station and Ovenden Branch; (10) Bailiff Bridge and Clifton-road Branch, and Low Moor, Sowerby Bridge, and Mirfield Engine Sheds; (11) Barnsley and Silkstone Branches; (12) Wakefield Engine Shed and Enginemen's Lodging House; (13) Knottingley to Goole; (14) Fleetwood Engine Shed and Engineering Works, for the London and North-Western Railway Co. Divisional Engineer, Hunts Bank, Manchester.

FEBRUARY 20.—**Aylesbury.**—PAINTING.—Painting, &c., of the Town Hall staircase, &c., and Cambridge-street property for the T.C. Mr. W. H. Taylor, Borough Surveyor, Town Hall, Aylesbury.

FEBRUARY 20.—**High Wycombe.**—ALTERATIONS.—For alterations and renovations to the Infirmary at the Union School, Bledlow, for the Board of Guardians. Mr. B. L. Reynolds, Clerk, 12, Easton-street, High Wycombe.

FEBRUARY 20.—**Newton Abbot.**—HOUSES.—Erection of ten houses, for the U.D.C. Mr. Joslas C. Beare, architect, 42, Devon-square, Newton Abbot. Deposit, £2 2s.

FEBRUARY 20.—**Plymouth.**—REPAIRS.—Repairs to 6, Morley-place, Plymouth. Specification from Medical Officer of Health's (Housing) Department.

FEBRUARY 20.—**Tredegar.**—RECORDING GAUGE HOUSES.—Construction of two recording gauge houses, for the U.D.C. Mr. D. Walter Davies, Waterworks Manager, Tredegar. Deposit £5.

FEBRUARY 21.—**Chesterfield.**—HOUSES.—Erection of 77 houses on St. Augustine's-road site, in three contracts, for the T.C. Messrs. Rollinson & Son, architects, 10, Corporation-street, Chesterfield. Deposit £1 1s.

FEBRUARY 21.—**Durham.**—ALTERATIONS AND ADDITIONS.—Alterations and additions to the Ministry of Pensions Hospital, Shotley Bridge, Co. Durham, for The Commissioners of H.M. Office of Works. Contracts Branch, King Charles-street, London, S.W.1. Deposit £1 1s.

✱FEBRUARY 21.—**Isleworth.**—ALTERATIONS.—Alterations to the entrance of the West Middlesex Hospital, including the provision of new gates, for the Guardians. Messrs. Dodge & Reid, 120, High-street, Brentford, Middlesex.

FEBRUARY 21.—**Wigan.**—ALTERATIONS.—Alterations at Wigan Post Office for the Commissioners of His Majesty's Office of Works. Contracts' Branch, King Charles-street, London, S.W.1. Deposit £1 1s.

FEBRUARY 22.—**Barrow.**—HOUSES.—Erection of 50 houses at Ocean-road, Walney for the T.C. Borough Engineer, Barrow.

BUILDING TRADE WAGES IN SCOTLAND.*

THE following are the present rates of wages in the building trade in the principal towns of Scotland. Every endeavour is made to ensure accuracy, but we cannot be responsible for errors that may occur:—

	Masons.	Bricklayers.	Carpenters, Joiners.	Plasterers.	Slaters.	Plumbers.	Painters.	Masons	Bricklayers Labourers	Plasterers'
Aberdeen	1/10½	1/10½	1/10½	1/10½	1/10½	1/10½	1/7	1/5½	to 1/6½	
Airdrie	2/0½	2/0½	2/0½	2/0½	2/0½	2/0½	—		1/7½	
Alexandria	2/0½	2/0½	2/0½	2/0½	2/0½	2/0½	—		1/7½	
Arbroath	1/11½	1/11½	1/11½	1/11½	1/11½	1/11½	1/11½		1/5½	
Ayr	2/0½	2/0½	2/0½	2/0½	2/0½	2/0½	1/9	1/5½	to 1/6½	
Bathgate	2/0½	2/0½	2/0½	2/0½	2/0½	2/0½	1/9	1/5½	to 1/6½	
Blairgowrie	1/11½	1/11½	1/11½	1/11½	1/11½	1/11½	—		—	
Bo'ness	2/0½	2/0½	2/0½	2/0½	2/0½	2/0½	2/-		1/8	
Coatbridge	2/0½	2/0½	2/0½	2/0½	2/0½	2/0½	—		1/7½	
Dumbarton	2/0	2/0	2/0	2/0	2/0	2/0	1/9		1/7½	
Dumfries	1/10	1/10	1/10	1/10	1/10	1/11½	1/8	1/4½	1/4½	1/5½
Dundee	2,0	2/0	2/0	2/0	2/0	2/4	1/9		1/7	
Dunfermline	2/0½	2/0½	2/0	2/0	2/0½	2/0½	—		1/7½	
Duns	1/6	1/6	1/6	1/6	1/6	1/6	1/6		1/0	
Edinburgh	2/0½	2/0½	2/0½	2/0½	2/0½	2/0½	—		1/7½	
Falkirk	2/0½	2/0½	2/0½	2/0½	2/0½	2/0½	—		1/7½	
Fort William	1/11½	1/11½	1/11½	1/11½	1/11½	1/11½	—		1/5	
Galashiels	1/11½	1/11½	1/11½	1/11½	1/11½	1/11½	—		—	
Glasgow	2/0½	2/0½	2/0½	2/0½	2/0½	2/0½	2/1		1/7½	
Greenock	2/0½	2/0½	2/0½	2/0½	2/0½	2/0½	1/9	1/4½	to 1/7½	
Hamilton	2/0½	2/0½	2/0½	2/0½	2/0½	2/0½	1/9		1/7½	
Hawick	1/10½	1/10½	1/10½	1/10½	1/10½	1/10½	1/8		1/3½	
Helensburgh	2/0½	2/0½	2/0½	2/0½	2/0½	2/0½	—		1/7½	
Inverness	1/11½	—	‡	1/7	1/6½	1/9	1/6		1/0½	
Kilmarnock	2/0½	2/0½	2/0½	2/0½	2/0½	2/0½	2/1		1/7	
Kirkcaldy	2/0½	2/0½	2/0½	2/0½	2/0½	2/0½	—		1/6½	
Kirkwall	1/9	1/9	1/9	1/9	1/9	1/9	—		1/2	
Lanark	2/0½	2/0½	2/0½	2/0½	2/0½	2/0½	—		1/7	
Motherwell	2/0½	2/0½	2/0½	2/0½	2/0½	2/0½	—		1/7½	
Perth	2/0½	2/0½	2/0½	2/0½	2/0½	2/0½	1/9		1/7½†	
Stirling	2/0	2/0	2/0	2/0	2/0	2/0	2/0½		1/7	
Stirlingshire (Eastern District)	2/0	2/0	2/0	2/0	2/0	2/0	1/9		1/7	
Wishaw	2/0½	2/0½	2/0½	2/0½	2/0½	2/0½	—		1/7½	

* The information given in this table is copyright. The rates of wages in the various towns in England and Wales are given on p. 240. † Under unemployment relief scheme, 11d. ‡ On strike: offered 1s. 6d., asking 1s. 10d.

FEBRUARY 22.—**Edmonton.**—PAINTING.—For external painting of North Middlesex Hospital, Edmonton; and (*b*) Enfield House, Enfield; and (*c*) Fortescue Villas, Enfield, for the Board of Guardians. Mr. J. C. S. Mummery, architect, 34, Bloomsbury-square, W.C.

FEBRUARY 22.—**Hackney.**—MAISONETTES.—Erection of 62 maisonettes, for the B.C. Borough Engineer, Town Hall, Mare-street, Hackney, E.8. Deposit £1 1s.

FEBRUARY 22.—**Leicester.**—HOUSES.—Erection of 60 houses: Block 1, 28 houses; Block 2, 32 houses, for the City Corporation. Mr. E. George Mawbey, City Surveyor, Wyggeston House, Highcross-street, Leicester. Deposit £3 3s. per block.

FEBRUARY 23.—**Barnoldswick.**—ALTERATIONS.—For alterations and repairs to Barnoldswick Gisburn-road Council School, for the West Riding E.C. Education Department, County Hall, Wakefield.

FEBRUARY 23. — **Castleford.** — CLOAK ROOM.—Provision of new boarded partitions, lavatory basins, &c., in the formation of a new cloak-room at temporary school premises, St John's Memorial Hall, Lock-lane, Allerton Bywater, Castleford, for the West Riding E.C. Education Department, County Hall, Wakefield.

FEBRUARY 23.—**Loughborough.**—HOUSES.—Erection of 20 houses on Thorpe Cottage housing site. Mr. W. Grainger, Acting Borough Surveyor, Town Hall, Loughborough. Deposit £5 5s.

FEBRUARY 23.—**Rossington.**—FENCE.—Repairs to wood fencing at Rossington New School, for the West Riding E.C. Education Department, County Hall, Wakefield.

✱FEBRUARY 24.—**Cardiff.**—ALTERATIONS.—Alterations at the Custom House, Cardiff, for the Commissioners of His Majesty's Office of Works. Contracts Branch, King Charles-street, S.W.1. Deposit £1 1s.

✱FEBRUARY 24.—**London.**—ALTERATIONS, &C.—(1) Alterations at the Post Office, Lewisham, S.E.2; (2) erection of huts at Canning Town, E., for the Commissioners of H.M. Works, &c. Contracts Branch, H.M. Office of Works, King Charles-street, S.W.1. Deposit £1 1s. in each case.

FEBRUARY 28.—**Ramsgate.**—ALMSHOUSES. — Erection of 10 almshouses, for the T.C. Mr. E. Healey, architect, Turner-street, Ramsgate. Deposit £2 2s.

✱FEBRUARY 28.—**Stanley.**—HOUSES.—Erection of houses at Stanley, co. Durham, for the Commissioners of H.M. Works, &c. Contracts Branch, H.M. Office of Works, King Charles-street, S.W.1. Deposit £1 1s.

✱MARCH 1.—**Paddington, W.1.**—BUILDING WORKS.—Extension of the existing main corridor and of other works at the Hospital, 285, Harrow-road, W.9, for the Guardians of the Poor of the Parish of Marylebone. Mr. P. Biddulph Hancock, Clerk to the Guardians, Guardians' Offices, 313-319, Harrow-road, W.9. Deposit, £3 3s.

✱MARCH 2.—**Mansfield.**—HOUSES.—Erection of 24 houses, Type A, Booth-crescent, in the said Borough, for the Borough Council on their Bull Farm site. Mr. Waude Thompson, Borough Engineer and Surveyor, Market-street, Mansfield, Deposit £1.

✱MARCH 6.—**Crayford.**—BUILDING, ROADS, SEWERS.—Building of 14 parlour type and 36 non-parlour type houses, including roads and sewers in connection with same, for the Crayford Urban District Council. Mr. Walter F. Bickford, Engineer and Surveyor, Council Offices, Crayford, Kent. Deposit £3 3s.

✱MARCH 10.—**Hants.**—REPAIRS AND MATERIALS.—Works contracts from April 1, 1922, at various stations in the North Aldershot Royal Engineer District of the Aldershot Command. Royal Engineers' Office, Marlborough Lines, North Aldershot, Hants.

✱NO DATE.—**London.**—BUILDING & ALLIED WORKS.—Applications are invited from persons and firms for inclusion on the Council's approved lists of persons and firms to be invited to tender for various works in connection with the Council's educationa institutions, for the L.C.C. Architect to the Council, New County Hall, S.E.1.

FURNITURE, MATERIALS, etc.

FEBRUARY 11.—**Cuckfield.**—MATERIALS.—Supply of road materials to the U.D.C. Mr. H. L. Richardson, Council Buildings, Haywards Heath.

FEBRUARY 11.—**Reigate.**—MATERIALS.—Supply of road materials and tools to the R.D.C. Mr. Arthur J. Head, Surveyor, 48, High-street, Reigate, Surrey.

FEBRUARY 13.—**Cramlington.**—ROAD MATERIALS.—Supply of road materials, &c., to the U.D.C. Mr. Wm. J. Coulson, Surveyor, Council Office, Cramlington.

FEBRUARY 13.—**Bristol.**—MATERIALS.—Supply of various materials to the Port of Bristol. Mr. T. A. Peace, Engineer, Chief Engineer's Office, Avonmouth Dock.

FEBRUARY 13.—**Broadstairs and St. Peter's.**—MATERIALS.—Supply of road materials and a 250 gall. tar sprayer. Mr. H. Hurd, Surveyor, Pierremont Hall, Broadstairs.

FEBRUARY 13.—**Finsbury.**—MATERIALS.—Supply of road and other materials to the B.C. Borough Surveyor, Town Hall, Rosebery-avenue, E.C.

FEBRUARY 13. — **Havant.** — ROAD MATERIALS.—Supply of granite and gravel, to the R.D.C. Mr. W. L. Hibberd, Surveyor, Havant.

FEBRUARY 13.—**Hendon.**—MATERIALS.—Supply of road and other materials to the U.D.C. Mr. A. L. Knight, Surveyor, Town Hall, Hendon, N.W.4.

FEBRUARY 13.—**Kensington.** — MATERIALS, &C.—Supply of materials, &c., for six or twelve months commencing April 1st, 1922, for the Royal Borough of Kensington. Mr. Wm. Chambers Leete, Town Clerk, Town Hall, Kensington, W.8.

FEBRUARY 13.—**London.**—TOOLS.—Supply of tools for various trades. Controller of Supplies, H.M. Office of Works, &c., King Charles-street, S.W.1.

FEBRUARY 13.—**Long Sutton.**—ROAD MATERIAL.—Supply of road material to the U.D.C. Mr. C. M. Bowser, Clerk, Long Sutton, Lincolnshire.

FEBRUARY 13.—**Newmarket.**—MATERIALS.—Supply of road materials to the U.D.C. Mr. W. H. Eley, Surveyor, Town Hall, Newmarket.

FEBRUARY 13.—**Ruislip Northwood.**—MATERIALS—Supply of road materials to the U.D.C. Mr. H. R. Metcalfe, Surveyor, Council Office, Northwood.

FEBRUARY 13.—**Wangford.**—MATERIALS.—Supply of road materials to the R.D.C. Mr. S. W. Rix, Clerk, Beccles.

FEBRUARY 14.—**London.**—STORES.—Supply to the Great Indian Peninsula Railway Company of (1) India-rubber hose pipes, sheets, &c.; (2) canvas hose pipes; (3) spark arresters, sieves, &c.; (4) lamp glasses, &c, Mr. R. H. Walpole, Secretary, 48, Copthall-avenue, E.C. 2. Charges, 5s., £1, 7s. 6d. and 2s. 6d. respectively.

FEBRUARY 14.—**Manchester.**—STORES.—Supply of various stores required by the Tramways Dept. J. M. McElroy, General Manager, 55, Piccadilly, Manchester.

FEBRUARY 14.—**Mitcham.**—MATERIALS.—Supply to the Wandle Valley Joint Sewerage Board of lime for sludge pressing and precipitation lubricating oils, &c. Mr. Rob. M Chart, Surveyor, Wandle Valley Joint Sewerage Board Offices, Lower Green, Mitcham.

FEBRUARY 14.—**Southall-Norwood.**—MATERIALS.—Supply of road and other materials to the U.D.C. Mr. J. B. Thomson, Surveyor, Town Hall, Southall.

FEBRUARY 14.—**Wakefield.**—ROAD MATERIALS, &C.—Road materials, tools and implements, for the West Riding C.C. Mr. H. R. Hepworth, County Surveyor, County Hall, Wakefield.

FEBRUARY 15.—**Bootle.**—MATERIALS.—Supply of road and other material to the T.C. Borough Engineer, Town Hall, Bootle.

FEBRUARY 15.—**Bury St. Edmund's.**—MATERIALS.—Supply to the West Suffolk C.C. of road materials. Mr. W. L. Jenkins, County Surveyor, Shire Hall, Bury St. Edmund's.

FEBRUARY 15.—**Finchley.**—TAR.—Supply of tar to the U.D.C. Mr. P. T. Harrison, Surveyor, Council Offices, Church End, Finchley, N.3.

FEBRUARY 15.—**Leeds.**—VARIOUS GOODS.—Supply to the Corporation Cemeteries of (1) stone flags; (2) gravestones; and (3) grass boards, shoulder boards, &c. Mr. W T Lancashire, City Engineer, Municipal Buildings, Leeds.

FEBRUARY 15.—**Long Sutton.**—ROAD MATERIAL.—Supply of road material to the U.D.C. Mr. Charles M. Bowser, Clerk, Long Sutton, Lincolnshire.

FEBRUARY 15.—**Wood Green.**—MATERIALS.—Supply of road and other materials to the U.D.C. Surveyor, Town Hall, Wood Green, N.

FEBRUARY 16.—**Alton.**—GRANITE.—Supply of broken granite, to the R.D.C. Mr. C. W. Maudsley, Surveyor, Park-close, Alton.

FEBRUARY 16.—**Bognor.**—FLOOR BOARDS, &C.—Supply of flooring and timber for construction of winter garden pavilion. Mr. J Tubb, Clerk, 68, High-street, Bognor.

FEBRUARY 16.—**Denbighshire.**—ROAD MATERIALS.—Supply of road materials to the C.C. Mr. E. W. Jones, County Surveyor, Wrexham.

FEBRUARY 16.—**Islington.**—STORES.—Supply to the Electricity Department of the B.C. of electrical and engineer's stores for one year. Electrical Engineer, 50, Eden-grove, Holloway, N.

FEBRUARY 17.—**Acton.**—MATERIALS.—Road and other materials, for the B.C. Mr. Wm. Hodson, Town Clerk, Municipal Offices, Acton, W.3.

FEBRUARY 18. — **Bedford.** — ROAD MATERIALS. — Supply to the C C. of road materials and cartage. County Surveyor, Shire Hall, Bedford.

FEBRUARY 18.—**Chester.**—MATERIALS.—Supply to the Cheshire County Council of granite macadam and chippings, tarred material, tar compounds, tar spraying, steam rolling, &c. Mr. W. Holland, County Surveyor, The Castle, Chester.

FEBRUARY 18.—**Cornwall.**—ROAD MATERIAL.—Supply of tar, bitumen, &c., for the Main Roads Committee of the County Council. Mr. L. D. Thompson, County Surveyor, County Hall, Truro.

FEBRUARY 18.—**Haywards Heath.**—TAR.—Supply of about 11,000 galls. of refined coal tar to the U.D.C. Mr. G. Plummer, Surveyor, Urban Council Offices, Haywards Heath.

FEBRUARY 18.—**Silsden.**—RETORTS, &C.—Supply of retorts, fireclay goods and silica goods, for the U.D.C. Gas Department. Mr. M. Driver, Gas Works, Silsden, near Keighley.

FEBRUARY 18.—**Stafford.**—MATERIALS.—Supply of stores and materials to the T.C. Mr W. Plant, Borough Engineer, Borough Hall, Stafford.

FEBRUARY 18.—**Truro.**—TAR.—Supply of tar bitumen, &c., to the Cornwall C.C. Mr. L. D. Thompson, County Surveyor, Truro.

FEBRUARY 20.—**Chailey.**—MATERIALS.—Supply of road materials to the R.D.C. Mr. R. P. Cheale, Surveyor, West-street, Lewes.

FEBRUARY 20.—**Colne.**—MATERIALS.—Road and other materials, for Highways Department of T.C. Mr. T. H. Hartley, Borough Engineer, Town Hall, Colne.

FEBRUARY 20.—**Rawtenstall.**—MATERIALS.—Supply of materials to the T.C. Borough Surveyor, Town Hall, Rawtenstall.

FEBRUARY 20.—**Richmond (Surrey).**—MATERIALS.—Supply of road and other material to the T.C. Mr. J. H. Brierley, Borough Surveyor, Town Hall, Richmond, Surrey.

FEBRUARY 20. — **St. Marylebone.** — MATERIALS.—Supply of materials to Highways Department. Highways Engineer, Town Hall, Marylebone-road, N.W.1.

FEBRUARY 20.—**Waltham.**—MATERIALS.—Supply to the U.D.C. of granite, flints, gravel, hoggin, ballast and sand, tar-macadam, and tar-spraying. Mr. W. C. Holloway, Surveyor, Town Hall, Waltham Abbey.

FEBRUARY 20.—**Warrington.**—GRANITE SETTS.—Supply to the T.C. of granite setts. Mr. A. M. Ker, Borough Engineer, Warrington.

FEBRUARY 20.—**Warrington.**—MATERIALS.—Supply to Tramways Committee of varnishes, scrap metal, &c. Tramways Manager, Car Sheds, Mersey-street, Warrington.

FEBRUARY 21.—**Ashford.**—MATERIALS.—Supply of 1,060 cub. yds. 2 in. broken granite, basalt, or cold blast furnace slag, to the U.D.C. Mr. Wm. Terrill, Surveyor, 5, North-street, Ashford.

FEBRUARY 21.—**Deptford.**—MATERIALS.—Supply of materials to the B.C. Mr. Arthur Purkis, Town Clerk, Town Hall, New Cross-road, S.E. 14.

FEBRUARY 21.—**Norwich.**—MATERIALS.—Supply to the Norfolk C.C. of granite, slag, and tarred macadam. Mr. W. W. Gladwell, County Surveyor, The Shirehouse, Norwich.

FEBRUARY 22.—**Hammersmith.**—STORES.—Supply of stores to the Electricity Department of the B.C. Mr G. G. Bell, Borough Electrical Engineer, 85, Fulham Palace-road, W.1.

FEBRUARY 22.—**London.**—MATERIALS.—Supply to the South Indian Railway Company, Ltd., of (1) hardware; (2) oils and colours. Mr. W. B. Reynolds, 91, Petty France, S.W. 1. Charges, £1 and 10s. respectively.

FEBRUARY 22.—**Twickenham.**—MATERIALS.—Supply of materials to the U.D.C. Mr. Fred. W. Pearce, Surveyor, Town Hall, Twickenham.

FEBRUARY 23.—**Durham.**—ROAD MATERIALS.—Supply of road materials, for the R.D.C. Mr. Geo. Gregson, Surveyor, 38, Saddler-street, Durham.

FEBRUARY 23.—**London.**—MATERIALS.—Supply of stores to the Metropolitan Water Board. Chief Engineer, New River Head, 173, Rosebery-avenue, E.C.1.

FEBRUARY 24.—**Wetherby.**—MATERIALS.—Supply of road materials to the U.D.C. Mr. F. Suttel, Surveyor, Council Offices, Wetherby.

FEBRUARY 25.—**Huntingdon.**—ROAD MATERIALS.—Supply of broken stone, slag, and tar macadam to the C.C. Mr. H. Leete, County Surveyor, Walden House, Huntingdon.

FEBRUARY 27.—**Leeds.**—MATERIALS.—Supply of materials to the Tramways and Highways Department. Mr. J. B. Hamilton, General Manager, 1, Swinegate, Leeds.

MARCH 1.—**East Ham.**—MATERIALS.—Supply of materials to the B.C. Mr. C. E. Wilson, Town Clerk, Town Hall, East Ham, E.

MARCH 1.—**Southwark.**—MATERIALS.—Supply of materials to the B.C. Mr. P. H. Gray, Town Clerk, Town Hall, Walworth-road, S.E. 17.

✱MARCH 8.—**London.**—For the supply and delivery of road materials (granite, gravel and ragstone) to the Royal Parks, for the Commissioners of H.M. Works, &c. Contracts Branch, H.M. Office of Works, King Charles-street, London, S.W.1.

MARCH 15.—**Hampstead.**—MATERIALS.—Supply of electrical engineer's stores to the B.C. Mr. A. P. Johnson, Town Clerk, Town Hall, Haverstock-hill, N.W.

MARCH 18.—**Egypt.**—STORES.—Supply of stores to the Ministry of Interior, Egypt. Department of Overseas Trade, 35, Old Queen-street, S.W.

ENGINEERING, IRON AND STEEL.

FEBRUARY 13.—**Dublin.**—STEELWORK.—Supply of about 100 tons of steelwork for ten short-span bridges, to the Great Southern & Western Railway Co. Mr. J. F. Sides, Chief Engineer, Great Southern & Western Railway, Inchicore, Dublin. Deposit £2 2s.

FEBRUARY 13.—**Durban.**—CAST IRON PIPES.—Supply to the T.C. of 350 tons of 12 in., 9 in., 8 in., 6 in., and 4 in. cast iron pipes. Messrs. Webster, Steel & Co., 5, East India-avenue, London, E.C. 3.

FEBRUARY 13.—**Durban.**—STEEL PIPES.—Supply to the Corporation of 2,700 ft., 20–25 ft. lengths, steel pipes, and No. 12 steel collars. Messrs. Webster, Steel & Co., 5, East India-avenue, E.C. 3.

FEBRUARY 13.—**Edinburgh.**—FOUNDATIONS, &C.—Conveyor and siding foundations and coal bunker at Portobello Power Station, for the T.C. Engineer, Dewar-place, Edinburgh.

FEBRUARY 13.—**London.**—ROADS.—Supply of 2,500 tons and, alternatively, of about 45,00 tons of standard steel girder tramway track rails, with fishplates therefor, for the L.C.C. Chief Engineer, Gloucester House, 19, Charing Cross-road, W.C.2. Deposit £2.

FEBRUARY 13.—**Middleton.**—TAR-SPRAYING MACHINE—Supply to the T.C. of (1) one horse-drawn tar-spraying machine; and (2) 20 street sand bins. Mr. J. P. Walmsley, Town Clerk, Town Hall, Middleton, Lancashire.

FEBRUARY 13.—**Wakefield.**—HEATING.—Alteration to existing heating installation at the Registry of Deeds, Kirkgate, Wakefield. West Riding Architect, County Hall, Wakefield.

FEBRUARY 13.—**Walton-on-Thames.** ELECTRICAL INSTALLATION. For wiring and fitting the premises known as "Elm Grove," Hersham-road, for electric lighting, for the U.D.C. Mr. R. Wilds, Surveyor, Council Offices, Walton-on-Thames.

FEBRUARY 14.—**Brighton.**—SHAFT.—Constructing a winding shaft and other works in connection with the Mile Oak Pumping Station, Portslade, for the T.C. Mr. Hugo Talbot, Town Clerk, Town Hall, Brighton.

FEBRUARY 14.—**Durham.**—PIPES.—Supply to the Durham County Water Board of 5,500 tons of cast-iron pipes. Messrs. T & C. Hawksley, engineers, 62, Broadway, Westminster, S.W. 1. Deposit £3 3s.

FEBRUARY 14.—**Wallasey.**—GAS PLANT.—Supply of gas plant to the T.C. Mr J. H. Crowther, Gas Works Offices, Limekiln-lane, Wallasey. Deposit £2 2s.

FEBRUARY 15.—**Australia.**—PIG-IRON BREAKER.—Supply to the Victorian Railway Commissioners of hydraulic pig-iron breaker, including tools, gears, accessories and spares (for Bendigo workshops). Dept. of Overseas Trade, 35, Old Queen-street, S.W.

FEBRUARY 15.—**Australia.**—TELEPHONE APPARATUS.—Supply of telephone apparatus and parts to the Deputy Postmaster-General, Brisbane. Dept. of Overseas Trade, 35, Old Queen-street, S.W.

FEBRUARY 15.—**Bulgaria.**—GRAIN ELEVATOR, &C.—Construction at the port of Varne of a concrete grain elevator (capacity, 30,000 tons) and drying shed. Department of Overseas Trade, 35, Old Queen-street, S.W.

FEBRUARY 15.—**Cardiff.**—RAILS.—Supply of 400 tons of steel tramway rails to the T.C. City Engineer, City Hall, Cardiff.

FEBRUARY 15.—**Edinburgh.**—ELECTRICAL WORK—Auxiliary circuits and electric lighting and earthing for Westbank Power Station, for the T.C. Engineer's Office, Dewar Place, Edinburgh. Deposit £2 2s.

FEBRUARY 15.—**London.**—BOILERS.—Supply to the East Indian Railway Co. of Lancashire Boilers. Mr. G. E. Lillie, Secretary, Nicholas-lane, London, E.C.4. Charge £1 1s.

FEBRUARY 15.—**Sheerness.**—STEELWORK.—Supply of 10 tons of structural steel work to the U.D.C. Surveyor, Council Offices, Trinity-road, Sheerness.

FEBRUARY 16.—**Bulgaria.**—STEEL STRUCTURES.—Supply, erection and painting of 31 steel structures of various sections for bridges, &c. Department of Overseas Trade, 35, Old Queen-street, S.W.

FEBRUARY 16.—**South Africa.**—STEEL BARS, &C.—Supply to the Kamanassie Irrigation Board, Oudtshoorn, Cape Province, of (*a*) about 200 tons of plain round mild steel rods and bars for concrete reinforcement; (*b*) Wrought-iron sluices and gratings, also cast-iron valves and manhole covers, &c. Dept. of Overseas Trade, 35, Old Queen-street, S.W.

FEBRUARY 17.—**Bradbury, &c.**—BRIDGES.—Renewal of three bridges at Bradbury, Crossgates, and Wressle, for the North-Eastern Railway Co. Mr. C. F. Bengough, Chief Engineer, York.

FEBRUARY 17.—**London.**—SPRINGS.—Supply to the Bombay, Baroda & Central India Railway Co. of helical springs. Mr. S. G. S. Young, Secretary, 91, Petty France, Westminster, S.W.1. Charge £1.

FEBRUARY 18.—**Bradford.**—TRAMRAILS.—Supply of 650 tons of steel girder tramrails. Mr. F. Marsden, City Engineer, Town Hall, Bradford.

FEBRUARY 18.—**Kirkcaldy.**—SEA WALL AND ESPLANADE.—Construction of a sea wall and esplanade on the foreshore in front of Sands-road, and for the improvement and widening of Sands-road, for the T.C. Mr. Wm. L. Macindoe, Town Clerk, Kirkcaldy. Deposit, £3 3s.

FEBRUARY 18.—**Oldbury.**—ELECTRIC INSTALLATION.—Installation of electric lights and fittings in the Public Buildings and Library, for the U.D.C. Mr. Roland Fletcher, Surveyor, Oldbury.

FEBRUARY 20.—**Chester.**—SUSPENSION BRIDGE.—Taking down and removal of the existing suspension bridge and the erection of a new wire-rope suspension bridge at Queen's Park, for the T.C. Mr. Charles Greenwood, City Engineer, Town Hall, Chester. Deposit £2 2s.

FEBRUARY 20.—**Hull.**—RAILS.—For 500 tons, or alternatively 1,000 tons, girder tramway rails, for the T.C. Mr. F. W. Bricknell, City Engineer, Guildhall, Hull.

FEBRUARY 20.—**Wallasey.**—RAILINGS AND GATES.—Supply of 3,900 lineal yds. unclimbable wrought-iron railings, 10 pairs double-hung gates with c.i. pillars, 6 hand-gates with c.i. pillars. Mr. W. H. Travers, Borough Engineer and Surveyor, Town Hall, Wallasey.

FEBRUARY 21.—**Argentine.**—PLANT.—Supply to the Argentine Ministry of Public Works of steam cranes, concrete mixers, tip wagons, machine tools, steam hammer, excavator, &c. Department of Overseas Trade, 35, Old Queen-street, S.W.

FEBRUARY 21 & 27.—**Manchester.**—IRONWORK.—c.i. water tanks, l.p. valves, cocks, pipe-work, &c. Mr. F. E. Hughes, Secretary, Electricity Department, Town Hall, Manchester.

FEBRUARY 21.—**Tottenham.**—ROLLER, &C.—Supply of one 10-ton steam roller with scarifier; three horse-drawn tar-spraying machines; three grit-spraying machines, to the U.D.C. Mr. R. C. Graves, Clerk, Town Hall, Tottenham, N. 15.

FEBRUARY 22.—**Ashton-under-Lyne.**—PIPES, &C.—For circulating water pipes and valves and exhaust steam pipe for the Electricity Committee of the T.C. Borough Electrical Engineer, Wellington-road, Ashton-under-Lyne. Deposit £1 1s.

FEBRUARY 22.—**East Grinstead.**—ELECTRICAL PLANT.—Supply to the U.D.C. of electrical plant and mains, including street lamps and travelling crane. Mr. E. P. Whitley Hughes, Clerk, 102, London-road, East Grinstead.

FEBRUARY 24.—**London.**—GIRDER BRIDGES.—Supply to the Bombay, Baroda, and Central India Railway Co. of girder bridges. Mr. S. G. S. Young, Secretary, The White Mansion, 91, Petty France, Westminster, S.W.1. Charge, £1.

FEBRUARY 26.—**Belgium.**—PORT.—Construction of fishing port at Ostend. Department of Overseas Trade, 35, Old Queen-street, S.W.

MARCH 1.—**Costa Rica.**—WHARF.—Construction of reinforced concrete wharf for the Public Works Dept. of Overseas Trade, 35, Old Queen-street, S.W.

MARCH 3.—**Johannesburg.**—HEATING AND DRYING PLANT.—Supply and erection of combined power, heating and drying plant for abattoirs, for the Johannesburg T.C. Messrs. E. W. Carling & Co., agents, St. Dunstan's Buildings, St. Dunstan's Hill, London, E.C.3. Deposit £1 1s.

MARCH 6.—**South Africa.**—SHED.—Supply of whole of materials required for steel-framed building for new engine shed at Vryhard East, Natal. High Commissioner for Union of South Africa, Trafalgar-square, W.C.

MARCH 8.—**Australia.**—TRANSFORMERS.—Supply of 35 cabin transformers for power signalling to the Victorian Railway Commissioners. Dept. of Overseas Trade, 35, Old Queen-street, S.W.

MARCH 15.—**Australia.**—TELEPHONE OPERATOR.—Supply of telephone protective apparatus to the Deputy Postmaster-General, Brisbane. Dept. of Overseas Trade, 35, Old Queen-street, S.W.

MARCH 16.—**Calcutta.**—WATERWORKS.—(I to VI) Supply and laying in a prepared trench of 30 miles of riveted steel pipe in the following sizes: 60 in., 54 in., 51 in., 48 in., 42 in., 36 in., and 33 in. Messrs. St. George-Moore & La Trobe-Bateman, 91, Victoria-street Westminster, S.W.1. Deposit £5.

MARCH 20.—**Calcutta.**—TAR-SPRAYING MACHINE.—Supply to the Municipal Council of tar-spraying machine of 600 gall. capacity to be drawn by steam roller. Deputy Chairman, 5, Corporation-street, Calcutta.

MARCH 29.—**Australia.**—BORING MACHINE.—Supply of one double spindle boring machine, including tools, gears, and accessories, for Newport workshops, for the Victoria Railway Commissioners. Dept. of Overseas Trade, 35, Old Queen-street, S.W.

APRIL 10.—**Siam.**—RAILWAY ACCESSORIES.—Supply of accessories for goods rolling stock, to the Siam State Railways. Messrs. C. P. Sandberg, 40, Grosvenor-gardens, London, S.W.1. Charge £2.

JUNE 19.—**Argentina.**—BRIDGES.—Supply and erection of suspension bridges for local authorities. Dept. of Overseas Trade 35, Old Queen-street, S.W.

OCTOBER 31.—**New South Wales.**—BRIDGE.—Construction of the superstructure and substructure of a cantilever bridge across Sydney Harbour from Dawes Point to Milson's Point, for the Government of New South Wales. Agent-General for New South Wales, Australia House, Strand, London, W.C.2.

ROAD, SANITARY, AND WATER WORKS.

FEBRUARY 11.—**Ayr.**—ROADWORK, &C.—Work required in forming permanent way, rail-laying, paving, roadwork, &c., of the doubling of the lines in Prestwick-road, Ayr, and the construction of the passing places in the Burgh of Prestwick, for the Ayr T.C. Mr. John Young, Tramway Engineer, Town Buildings, Ayr. Deposit, £3 3s.

FEBRUARY 11.—**Thorne.**—SANITARY.—Collection and disposal of nightsoil, emptying of cesspools, &c., for the R.D.C. Sanitary Inspector, Council Offices, Thorne.

FEBRUARY 11.—**Worsborough.**—ROADS.—Making up of the footpath on the Wakefield and Sheffield main road, for the U.D.C. Mr. T. Shield, Council's Surveyor, Saville House, Worsborough Bridge. Deposit, £1 1s.

FEBRUARY 13.—**France.**—SEWAGE WORKS.—**The Municipality of Lille has a project for land drainage and sewage works in the area of Basse-Deule, the outlet of the town drainage system. United Kingdom firms who have executed such works are invited to tender. They should forward certificates, giving particulars of the conditions under which such works were executed, to the "Directeur des Travaux Municipaux, à la Maire de Lille," who will visé the documents and forward them to the adjudicating committee of the Municipality. Copies of the specification and plans have been applied for and will be available for inspection as soon as received in the Department of Overseas Trade (Room 84), 35, Old Queen-street, London, S.W. 1.**

FEBRUARY 13.—**Gravesend.**—MAIN DRAINAGE.—Constructing a new system of main drainage through a portion of the town, for the T.C. Messrs. Northcroft, Neighbour & Nicholson, quantity surveyors, 55-56, Chancery-lane, W.C.2. Deposit £5.

FEBRUARY 13.—**Hayes.**—ROADS, &C.—Construction of roads, footpaths, sewers, &c., in connection with housing, for the U.D.C. Mr. D. C. Fidler, Surveyor, Council Offices, Hayes, Middlesex. Deposit £2 2s.

FEBRUARY 13.—**Lanarkshire.**—SEWERS.—Construction of sewers in connection with Eastfield Housing Scheme, for the Lanark C.C. Mr. J. A. M'Callum, District Clerk, 15, West George-street, Glasgow. Deposit £1 1s.

FEBRUARY 13.—**London.**—REMOVAL OF DEPOSIT.—For removal and disposal of sewer deposit and other material in connection with main drainage, for the L.C.C. Chief Engineer, 19, Charing Cross-road, S.W. Deposit, £1.

FEBRUARY 13.—**North Riding of Yorkshire.**—CONCRETING.—For concreting the school playgrounds at the following schools:—(1) Thornaby Queen-street, (2) Thornaby Westbury-street, (3) South Eston Girls, (4) Grangetown Infants. Mr. J. C. Wrigley, Education Offices, Northallerton.

FEBRUARY 13.—**Scunthorpe.**—SEWER.—Construction of a 30-in. reinforced concrete sewer in Berkeley-street, Crosby, for the U.D.C. Mr. Alexander M. Cobban, Engineer, County Buildings, Scunthorpe.

✱FEBRUARY 14.—**Kennington.**—Drainage work at the Infirmary and Workhouse, for the Guardians of the Poor of the Parish of Lambeth. Mr. James L. Goldspink, Clerk to the Guardians, Guardians' Offices and Board Room, Brook-street, Kennington, S.E.11. Deposit £2.

FEBRUARY 14.—**London.**—REPAIRS TO WATER MAINS.—For laying, repairs and alterations to water mains for periods of three, six or twelve months, for the Metropolitan Water Board. Chief Engineer, 173, Rosebery-avenue, E.C.

FEBRUARY 14.—**Maldens and Coombe.**—ROADS.—(A) Making-up of Back Coombe Parade, (B) Kingston-road improvement. Mr. Reginald H. Jeffes, Surveyor, Council Offices, New Malden, Surrey. Deposit £2 2s.

FEBRUARY 14.—**Wellington (Salop).**—WATER SUPPLY,—(1) Laying two miles of 7 in. pumping main, &c., (2) enlargement of pumping station, (3) supply and fixing of standpipe, suction gas engine plant, &c., for the U.D.C. Mr. G. H. Connor, Surveyor, Council Offices, Wellington. Deposit £2 2s.

FEBRUARY 15.—**Glossop.**—SEWERAGE WORKS.—For alteration and extension of sewage outfall works for the T.C. Messrs. Brady & Partington, Town Hall, Chapel-en-le-Frith. Deposit £5.

FEBRUARY 16.—**West Ham.**—SEWER.—Construction of about 2,300 lineal yards of concrete tube and brick sewer, 3 ft. diameter, at Silvertown, E., for the B.C. Borough Engineer, Town Hall, West Ham, E.15. Deposit £2.

FEBRUARY 16.—**Strood.**—ROADS.—(1) Widening of section of Higham Hill; (2) widening of lower road, Higham and Shorne; (3) widening of road at Cobham, for the R.D.C. Mr. L. Randerson, Surveyor, Meopham, near Gravesend.

FEBRUARY 17.—**Godstone.**—TAR-SPRAYING.—Tar-spraying highways, for the R.D.C. Mr. G. E. Crowter, Engineer, Council Offices, Oxted.

FEBRUARY 17.—**Manchester.**—ROADS.—Construction of new roads, &c., at Hollinwood, Manchester, for The Commissioners of H.M. Office of Works. Contracts Branch, King Charles-street, London, S.W.1. Deposit £1 1s.

FEBRUARY 18.—**Carlisle.**—TAR SPRAYING.—For tar spraying approximately 600,000 sq. yds. of main roads, for the Cumberland C.C. Mr. W. H. Butler, County Surveyor, Carlisle.

FEBRUARY 18.—**Reigate.**—SEWERS.—Laying of about 1,600 yds. of 12 in., 9 in. and 6 in. sewers at Horley, for the R.D.C. Messrs. T. R. & V. Hooper, Surveyors, Market Hall Buildings, Redhill. Deposit £2 2s.

FEBRUARY 18.—**Spalding.**—WATER MAINS.—Construction of new water mains, &c., in the parishes of Cowbit and Weston, for the R.D.C. Mr. E. J. Silcock, engineer, 17, Victoria street, Westminster.

FEBRUARY 20.—**Romford.**—SEWER.—Construction of about 4,280 ft. of 36 in. diameter concrete sewer and other works in Dagenham and Hornchurch, for the R.D.C. Mr. W. Fairley, Engineer, Parliament Mansions, S.W.

✱FEBRUARY 21.—**Bethnal Green, E2.**—REPAIRS TO ROADWAY.—For repairs to a section of the roadway at the hospital in Cambridge-road, for the Guardians. Mr. C. Franklin Jones, Clerk to the Guardians, Administrative Offices, Bishop's-road, Bethnal Green. E.2. Deposit £2.

FEBRUARY 22.—**Southport.**—ROADS.—Making up Leamington-road, Ainsdale, for the T.C. Mr. A. E. Jackson, Borough Engineer, Town Hall, Southport. Deposit, £2 2s.

FEBRUARY 23.—**Manchester.**—ROADS.—For paving and curbing at Bradford-road Works, for the Gas Department. Mr. Godfrey W. Kaye, Secretary, Gas Department, Town Hall, Manchester. Deposit, £1 1s.

FEBRUARY 23.—**Salford.**—ROADS.—For flagging, asphalting, and tar macadamising streets in connection with the housing schemes of the Corporation. Borough Engineer, Town Hall, Salford.

FEBRUARY 27.—**Wallington.**—ROADS AND FOOTPATHS.—Completion of roads and formation of footpaths on Demesne Estate for Beddington and Wallington U.D.C. Mr. S. F. R. Carter, A.M.I.C.E., Council Offices, Wallington, Surrey. Deposit £1 1s.

FEBRUARY 28.—**Dumfries.**—MAINS.—Supplying and laying of about 2,135 lineal yds. of 4 in., 3 in., and 2 in. cast-iron water mains, and of about 717 lineal yds. of 9 in. and 6 in. fireclay pipe sewers, at the Kelloholm housing site, for the County Council. Mr. W. C. Easton, engineer, 149, West George-street, Glasgow. Deposit, £2 2s.

MARCH 2.—**Failsworth.**—ROADS.—Construction of about half-a-mile of main arterial road, of 100 ft. in width, between Oldham-road and Moston Brook, for the U.D.C. Messrs. Charles J. Lomax & Son, engineers, 37, Cross-street, Manchester. Deposit, £3 3s.

✱MARCH 7.—**London.**—CARRIAGEWAYS AND FOOTWAYS.—Execution of such works as may be required to be done during the term of one, two or three years from the first day of July next, in the repair and maintenance of all works of stone paving in the carriageways and footways of the City for the Corporation of London. City Engineer, Guildhall, E.C.2. Deposit £2 2s.

✱MARCH 7.—**London.**—SEWERS AND DRAINS.—Reparation, maintenance and reconstruction of the sewers and drains of the City for the Corporation of London. Public Health Department, City Engineer, Guildhall, E.C.2. Deposit £2 2s.

NO DATE.—**Leiston-cum-Sizewell.**—DRAINAGE.—Scheme of main surface water drainage, for the U.D.C. Messrs. D. Balfour & Son, engineers, 6, Mitre-court Chambers, Temple, London, E.C. 4. Deposit, £5.

Competitions.

(*See Competition News, page* 218.)

Auction Sales, Tenders, etc.

FEBRUARY 14.—**Cromer.**—Messrs. Joseph Hibbard & Sons will sell, without reserve, by order of Messrs Osborne & Co., at the Felbrigg Estate (two miles from Cromer, on the Cromer-Holt road) stock of timber and plant. Auctioneers, 15, Newington-green, Islington, London, N.16.

FEBRUARY 14.—**Isleworth.**—Messrs. Debenham, Tewson & Chinnocks will sell riverside premises known as "Lion Wharf," Isleworth river frontage. Auctioneers, 80, Cheapside, E.C.2, and 13, Park-place, S.W.1.

FEBRUARY 14.—**Worthing.**—Messrs. Debenham, Tewson & Chinnocks will sell, at the Mart, freehold hotel property, situate at West Worthing. Auctioneers, 80, Cheapside, E.C.2.

FEBRUARY 15.—**Acton.**—**Messrs. Daniel Smith, Oakley & Garrard will offer for sale at the London Auction Mart (Room E.), 155, Queen Victoria-street, E.C.2, freehold building site about 36,000 feet super forming part of The Elms Estate. Auctioneers, 4 and 5, Charles-street, St. James's-square, London, S.W.1.**

✱FEBRUARY 15.—**Hounslow.**—Messrs. J. T. Skelding & Co. will sell, at St. Alban's Works, Staines-road, Hounslow, new and second-hand surplus of builder's and contractor's plant and stores, including upwards of 125 standards of new timber. Auctioneers, 48, Gresham-street, Guildhall, E.C.2.

✱FEBRUARY 15.—**London, S.E.**—Messrs. Veryard & Yates, F.A.I., will sell, without reserve, building plant and materials, timber and fittings, at 126A, Norwood-road. Auctioneers, 365, Norwood-road, S.E.27.

✱FEBRUARY 16.—**Mitcham, Surrey.**—Messrs. Leonard Davey & Hart will sell at the new cinema site, High-street, Mitcham, builder's plant and stock. Auctioneers, The Mitcham Auction and Estate Offices, Upper Green, Mitcham.

✱FEBRUARY 21.—**Victoria, S.W.1.**—Messrs. Rogers, Chapman & Thomas will sell at Denbigh Mews, Victoria, S.W.1, builder's plant and effects. Auctioneers, 50, Belgrave-road, S.W.1.

FEBRUARY 28.—**London, E.C.**—Messrs. Fuller, Horsey & Co. will sell by order of the Port of London Authority in the Merchants' Hall, Baltic Exchange, St. Mary Axe, Contractor's Plant, including cranes, concrete mixers, &c., &c. Auctioneers, 11, Billiter-square, E.C. 3.

✱MARCH 1.—**London, E.C.**—Messrs. Fuller, Horsley, Sons & Cassell will sell, in the Merchant's Hall, Baltic Exchange, St. Mary Axe, London, by order of the Port of London Authority, contractor's plant and machinery used in the construction of the King George V. Dock. Auctioneers, 11, Billiter-square, E.C.3.

Public Appointments.

✱FEBRUARY 21.—**Hampshire.**—Accountant Clerk required by the Hampshire County Council in the

PROPOSED NEW BUILDINGS & OTHER WORKS.*

In these lists care is taken to ensure the accuracy of the information given, but it may occasionally happen that, owing to building owners commencing work before plans are finally approved by the local authorities, "proposed" works at the time of publication have been actually commenced. Abbreviations:—T.C. for Town Council; U.D.C. for Urban District Council; R.D.C for Rural District Council; E.C. for Education Committee; B.G. for Board of Guardians; L.C.C. for London County Council; B.C. for Borough Council; and P.C. for Parish Council.

ADWICK.—Plans have been approved by the U.D.C. for the erection of a surface reservoir, water-tower, and softening plant. Mr. F. Allen is the Surveyor to the Council.

AUDENSHAW.—Plans passed by U.D.C.: Motor garage, for the Jones Sewing Machine Co.; shed, Station Garage, Manchester-road, for Mr. F. Sutcliffe.

BALLYMENA.—The R.D.C. has decided to approach the Northern Ireland Government for advice as to the building of new houses.

BARLBY.—The East Riding E.C. proposes to build a new school to accommodate 210 children.

BATH.—The T.C. has received sanction to borrow £7,950 and £2,050 for the reconstruction of the tepid swimming bath.—Plans approved: Two garages at Tramway Company's depôt, London-road; extension of club room, Manvers-street Institute; enlargement of tepid swimming bath between Beau-street and Bilberry-lane; bungalow, Hampton-row; tool house, 119, Newbridge-road; club room, Red House, Upper Borough Walls.

BOLTON.—Plans passed by T.C.: Messrs. J. Pendlebury & Co., for motor garage, Eden-street; Messrs. T. Hardcastle & Son, Ltd., for transformer house, Firwood Bleachworks; Messrs. Haslam, for New street and weaving shed, Tonge Fold; Mr. Wm. Bradley, for conversion of office into dwelling house, Croft Side, Darcy Lever; Messrs. Price Bros; for extension to premises, Fairclough-street; Mr. W. J. Hughes, for wooden store shed, Eckersley-street, St. Helens-road; Mr. Wm. Sharples, for garage and crossing, Margaret-street; Bolton Union Guardians, for labour shed, Central-street; Mr. T. M. Hornby, for extension to premises, 25–27, Great Moor-street; Mr. Joseph T. Simpson, for wooden store sheds, Morris-street; Messrs. J. Musgrave & Sons, Ltd., for petrol tanks, off Croasdale-street; Mr. Henry Warburton, for petrol tanks, Back-o'-the-Bank Bakery, Hereford-street; Dr. James Ratcliffe, for alterations to premises, 293, Halliwell-road.

BRADFORD.—The Finance Advisory and Co-ordination Sub-Committee have approved of application being made for borrowing powers in respect of the following works: Tram track reconstruction in Thornton-road (Listerhills), £17,242; tram track reconstruction in Thornton-road (on the new road at School Green), £19,008; and provision of converting plant required by the Electricity Committee. £13,980.

BURNHAM-ON-CROUCH.—Plan passed by U.D.C.: Bungalow, Easter-road, for Mr. H. Billinghunt.

BURNLEY.—Plans passed by T.C.: Garage, Brunswick-street, for Messrs. Lancaster, Son & Parkinson; conveniences at George-street shed, for Messrs. J. Stansfield & Sons, Ltd.; conveniences at Oxford Mill, Oxford-road, for the Oxford Mill Co., Ltd.; waste store at Stanley Mill, Shackleton-street, for Messrs. R. Emmott, Ltd.; shop front, 110, Brougham-street, for Mr. J. A. Clegg; office in Bank-parade, for Mr. T. Steen; shop, 356 and 358, Colne-road, for Mr. T. Burton; workshop and timber store, Edward-street, for Messrs. H. & R. Clegg.

BUXTON.—Plans passed by T.C.: Garage at Manor House, Manchester-road, for Mr. Bailey; bay window at The Grange, for Miss Dodd; bungalow at Lascelles-road, for Mrs. Binns; washhouse, &c., at Spring Bank, Marlborough-road, for Messrs. S. A. G. and B. P. Smith.

CARLISLE.—It is reported that Mr. E. J. Hill, to whose enterprise the garden suburb at Stanwix was first due, contemplates the creation of another residential thoroughfare on garden suburb principles in the St. Aidan's district, and plans have been passed by the civic authorities this week. The first four semi-detached houses to be built on the south side of Waterworks-lane.

CHESTERFIELD.—On behalf of the Ministry of Transport, an inquiry has been held into the application of the Ashover Light Railway Co. for sanction to an amended scheme. In 1919 the Ministry authorised a standard gauge railway from Stretton to Ashover, but the company now suggested the substitution of a 2 ft. gauge railway, 2¾ miles long, and the carrying of the track to the Clay Cross Company's works from the Stretton terminus. The diversion was necessary owing to the Clay Cross Company having, as a concession to the residents of Ashover, agreed to construct proposed lime kilns at Clay Cross instead of at Ashover. The total cost of the works is £37,000.

DUBLIN.—The National Bank has purchased premises in Portunna and will reconstruct them for the establishment of a branch bank. The Munster & Leinster Bank has secured the old R.I.C barracks at Athboy with the view of utilising it after reconstruction as a branch bank.

GOLDTHORPE.—Plans have been approved for the erection of four lock-up shops at Goldthorpe, near Rotherham. The architect is Mr. P. A. Hinchliffe, of 14, Regent-street, Barnsley.

HALIFAX.—The T.C. has approved of the recommendation of the Waterworks Committee to reconstruct the Park-road Baths at an estimated cost of £10,000.

HEELEY.—Plans have been approved for additions to the Heeley Coliseum, Heeley, near Sheffield. The plans include a new balcony to seat 334 more people than the present balcony. The architect is Mr. P. A. Hinchliffe, of 14, Regent-street, Barnsley.

HULL.—The T.C. has decided to construct a lavatory in the centre of the town at a cost of £20,000.

LEEDS.—Plans passed by U.D.C.: Workshop, Lea Bridge-road, for Mr. J. R. Oderbolz.

LONDON (BATTERSEA).—The L.C.C. has given sanction to the B.C. borrowing £8,555 for the reconstruction of sewers.

LONDON (STREATHAM).—Plans passed: Two one-story shops, Sternhold-avenue, Messrs. Crabb & Son, on behalf of Mr. J. M. Kingston.

LONDON (WANDSWORTH).—Sanction has been given by the L.C.C. to the B.C. borrowing £1,294 for fitting up premises as a tuberculosis dispensary.—The managers of the Nightingale-square R.C. school propose to enlarge the premises.

LONGTOWN.—Plans have been passed by the R.D.C. from Mr. T. Spark of Nentholme, Alston, on his own behalf, for additions and alterations to Monkhill Hall Farm, Beaumont, and from Mr. H. H. Hodgkinson, architect, Carlisle, on his own behalf, for the erection of two houses on land abutting the Wheelbarrow Hall, Scotby-road.—It has been decided that the Longtown war memorial shall take the form of a new hall to be erected at the west end of the town. The new hall will seat 500. Plans have been prepared by Mr. Foxall, Carlisle.

MANCHESTER.—The justices have granted the application of Charles Stanley Ashworth, of the Grosvenor Hotel, Lower Broughton, for the provisional removal of the full licence of the "Three Crowns," Jackson-street, to premises to be constructed at the corner of Lloyd-street South and Parkside-road, to be called the "Parkside Hotel."

MERTHYR TYDVIL.—The T.C. has agreed to build at Gellifaelog 30 non-parlour and 20 parlour houses, and at Aberfan 16 and 10 respectively.

MITCHAM.—The Surrey C.C. proposes to erect a new school for 400 children.

RICKMANSWORTH.—The County Surveyor has been instructed by the Herts C.C. to prepare plans for the erection of a school on the site adjoining the Mill End C.C. school to accommodate 150 boys.

ROCHDALE—Plans passed by T.C.: Rochdale and Manor Brewery, Ltd., alterations to North East Hotel; Fred Butterworth, motor garage, 243 and 245, Rooley Moor-road; East & Cocker, two bungalows, Edenfield-road; Wilson's Brewery, Ltd., "Church Inn" public house, Willbutt's-lane; J. Bright & Bros., motor garage, Fieldhouse Mills; Lewis Fletcher, dwelling-house, Willbutt's-lane.

ROTHERHAM.—Plans passed by T.C.:—Rotherham Rural District Council, Grove-road, new Council offices; Messrs. Dean & Dawson, Ltd., junction of Main-street and Great Central Station approach road, one-storied building for offices; Mrs. Geo. Smith, Moorgate-avenue, dwelling-house.

RUGBY.—Plans passed by U.D.C.: Anglo-American Oil Co., a depot at the rear of Wood-street: Mr. W. H. Taplin, for three houses in Kew-road. The R.D.C. has approved plans as follows: Mr. R. B. Friend, for slaughter-house and butcher's shop at Bilton; Mr. F. T. Downes, for alteration to Hill Farm, Bretford; and the United Services Fund, for new lavatories at Bawnmore, Bilton.

SALFORD.—Plans passed by T.C.: Construction of garage behind "Glenluce," Water Park-road, Broughton; drains, Montford-street, Salford; covered way Union-street, Salford. Alterations to 428–430, Regent-road, Salford; "Red Lion" inn, Bolton-road, Pendleton; butchering department, Pendleton Co-operative Industrial Society, Cheltenham-street, Pendleton. Additions to dwelling-house, "Kinnoull," Vernon-road, Broughton. Construction of fire escape, Percy-streey Pendleton; two semi-detached dwelling-houses, Burt Old-road, Broughton; billiard hall, Derby-road, Pendleton; garage, 379A, Bolton-road, Pendleton; sanitary accommodation, 47–51, Seedley-road, Pendleton; club, 18, Leaf-square, Pendleton. Alterations to sanitary accommodation at "Breeze-hill," Holden-road, Broughton; sanitary accommodation and interior of "King William IV" hotel, East Ordsell-lane, Salford; garage, 525, Eccles New-road, Pendleton; premises behind Tootal-road, Pendleton.

STAFFORDSHIRE.—The Staffordshire, Wolverhampton and Dudley Joint Tuberculosis Committee has decided that the architect shall make plans for clearing the site of the Prestwood Hall, destroyed recently by fire, and to prepare plans for the construction of a block of buildings.

STAINFORTH.—Plans have been approved for the erection of business premises in Church-road, Stainforth, near Doncaster, for Messrs. Hepworth & Hancock. The architect is Mr. P. A. Hinchliffe, of 14, Regent-street, Barnsley.

SUNDERLAND.—Some time ago the River Wear Commission sanctioned the construction of a large graving dock and fitting-out quay at the South Docks, Sunderland, and they are now asking the permission of the Board of Trade to construct a sea wall and fitting-out quay, and the extension of the sea wall north of the new South Pier, together with the necessary reclamation and dredging work.

TRALEE.—New premises for the National Land Bank, Ltd., are to be built in Denny-street.

WELWYN.—The Herts C.C. has given approval to an expenditure of £10,280 for an elementary school at the Garden City to accommodate 400 children.

WIMBLEDON.—Plans passed by B.C.: Mr. O. Kennard, addition, 42, Dunmore-road; Messrs. F. Rowntree & Sons, garden shelter, wall, &c., 23, West Side, Wimbledon Common; Mr. J. S. Thomson, alterations, 1, Hill-road; Messrs. Prices, extension of garage at the "Rose and Crown" hotel, High-street; Mr. S. Howse, workshop, 154, Hartfield-road; Mr. H. A. Evans, conservatory, 11, The Crescent; Messrs. S. N. Soole & Son, addition, 1, Parkside-gardens.

* See also our List of Contracts, Competitions, etc.

FIRES.

BALLYMONEY.—Damage estimated at £10,000 has been caused by a fire on the premises of M'Elderry, Pollock & Co., which had only recently been extended.

BIRKENHEAD.—Damage to the extent of about £15,000 was caused on Sunday morning by fire which destroyed the Congregational Church, Woodchurch-road, Birkenhead, one of the finest churches in the town.

BLYTH.—Damage stated to exceed £2,000 has been caused by a fire at the premises of the Fitwell Clothiers, Ltd., in Waterloo-road.

FROME.—A serious fire has occurred at the Wallbridge Cloth Mills.

GLASGOW.—A fire has occurred in the grocery shop of Mr. Patrick Cosgrave at 28, Maitland-street.

GUISELEY.—A house and shop in Town-street, Guiseley, have been gutted by fire. The property belongs to Mr. Thomas Walmsley, and was tenanted by Mr. Beniah Wakeman.

PETERHEAD.—The west wing of the Peterhead Academy and Junior Student Centre, a one-story building covering a big area, and an adjoining gymnasium, have been totally destroyed by fire. The damage is estimated at £20,000.

EASTWOODS
LIMITED
BRICK MANUFACTURERS
CEMENT, LIME AND BUILDERS' MERCHANTS
Head Office: 47, BELVEDERE ROAD, LAMBETH, S.E.1 Phone: HOP 3448 (3 lines)
HOLD LARGE STOCKS OF
BRICKS
READY FOR IMMEDIATE DELIVERY

PRICES CURRENT OF MATERIALS.*

[Owing to the exceptional circumstances which prevail at the present time, prices of materials should be confirmed by inquiry. Since our last issue several prices have been revised.—Ed.]

BRICKS, &c.

Per 1,000 Alongside, in River Thames up to London Bridge. £ s. d.

Best Stocks 4 13 0

Per 1000, Delivered at London Goods Stations.

	£ s. d.		£ s. d.
Flettons, at King's Cross	3 5 0	Best Blue Pressed Staffs.	10 11 6
Do. grooved for plaster	3 7 0	Do. Bullnose ..	11 1 6
Do. Bullnose ..	4 0 0	Blue Wire Cuts	8 11 6

Best Stourbridge Fire bricks:—

2½ in.	11 3 0	3 in.	13 2 0

GLAZED BRICKS—

Best White, Ivory, and Salt Glazed Stretchers ..	26 0 0	D'ble Str'tch'rs	34 10 0
		D'ble Headers	31 10 0
		One Side and two Ends ..	35 10 0
Headers	25 10 0	Two Sides and one End	36 10 0
Quoins, Bull-nose and 4½in. Splays and Flats	32 10 0	Squints	34 0 0

Second Quality, £1 per 1,000 less than best. Cream and buff, £2 extra over white. Other colours, Hard Glaze, £5 10s. extra over white.

	s. d.		
Thames Ballast	14 0	per yard,	delivered 2 miles radius
Pit Sand	17 0	,, ,,	
Thames Sand	19 0	,, ,,	
Best Washed Sand	19 0	,, ,,	
½ in. Shingle for Ferro-Concrete	19 0	,, ,,	Paddington.
¼ in ,, ,,	20 0	,, ,,	

Per ton delivered in London area in full van loads.

	£ s. d.		£ s. d.
Best Portland Cement. British Standard Specification Test.....	3 10 6	..	3 16 0

63/6 alongside at Vauxhall in 80-ton lots.

Ferrocrete per ton extra on above 10 0

NOTE.—The sacks are charged at 2s. 3d. each and credited at 2s. each if returned in good condition within three months, carriage paid.

Best Ground Blue Lias Lime 2 8 0 at rly. depot.

Grey Stone Lime 65s. 0d. per ton delivered in City and Central districts.

Stourbridge Fireclay in s'cks 37s. 8d. per ton at rly. dpt.

STONE.

BATH STONE—delivered in railway trucks at	s.	d.
Westbourne Park, Paddington, G.W.R., or South Lambeth, G.W.R., per ft. cube.....	3	2½
Do. do. delivered in railway trucks at Nine Elms, L. & S.W.R., per ft. cube	3	5½
Do. do. delivered on road wagons at Nine Elms Depot	3	6½

PORTLAND STONE—

Brown Whitbed, in random blocks of 20 ft. average, delivered in railway trucks at Nine Elms, L.& S.W.R., South Lambeth Station, G.W.R., and Westbourne Park, Paddington, G.W.R., per ft. cube	4	11½
Do. do. delivered on road wagons at above stations, per ft. cube..	5	0½

White basebed, 3d. per ft. cube extra.

NOTE.—½d. ft. cube extra for every foot over 20 ft. *average*, and ½d. beyond 30 ft.

YORK STONE, BLUE—*Robin Hood Quality.*

Delivered at any Goods Station London.

	s.	d.
6 in. sawn two sides landings to sizes (under 30 ft. super.) ..... Per Ft. Super	7	4½
6 in. rubbed two sides, ditto ..... ,,	8	0½
3 in. sawn two sides slabs (random sizes) ,,	3	3
2 in. to 2½ in. sawn one side slabs (random sizes) ..... ,,	2	1
1½ in. to 2 in. ditto, ditto ..... ,,	1	9

HARD YORK—

Delivered at any Goods Station London.

Scappled random blocks ..... Per Ft. Cube	8	0
6 in. sawn two sides landing to sizes (under 40ft. super.) ..... Per Ft. Super	7	0
6 in. sawn two sides ditto ..... ,,	8	0
4 in. sawn two sides slabs (random sizes) ,,	3	11
3 in. ditto, ditto ,,	3	1
2 in. self-faced random flags .. Per Yard Super	10	6

WOOD.

GOOD BUILDING DEAL.

Inches	£ s.	
4 × 11	36 0	per standard
4 × 9	35 0	,,
4 × 8	30 0	,,
4 × 7	30 0	,,
3 × 8	30 0	,,
3 × 7	25 0	,,
2½ × 7	25 0	,,
3 × 6	25 0	,,
3 × 11	34 0	,,
2 × 11	32 0	,,
3 × 9	30 0	,,
2½ × 9	30 0	,,
3 × 4½	20 10	,,
3 × 4	20 10	,,

PLANED BOARDS.

1 × 11	45 0	,,
1 × 9	40 0	,,

PLAIN EDGE FLOORING.

Inches		
¾	20/-	per square
¼	22/6	,,
1	25/-	,,
1¼	30/-	,,
1½	37/6	,,

TONGUED AND GROOVED FLOORING.

Inches		
1	25/-	per square
1¼	30/-	,,
1½	37/6	,,

WOOD (*Continued*).

MATCHINGS (BEST).

Inches		
¾	17/6	per square
¼	20/-	,,
1	25/-	,,

Inches BATTENS.	s. d.	
¾ × 2	3 0	per 100 ft.

SAWN LATHS.

Per bundle				0 4	0
Dry Wainscot Oak, per ft. super, as inch	0 2 6	to	0	3	0
¼ in. do. do.	0 1 10½	to	0	2	6
Dry Mahogany—Honduras, Tabasco, African, per ft. super, as inch	0 2 3	to	0	3	0
Cuba Mahogany	0 3 6	to	0	4	0
Teak (Rangoon, Moulmein or Java), per load.... ..	52 10 0	to	55	0	0
American Whitewood planks, per ft. cube ...	0 16 0	to	0	18	0
Best Scotch Glue, per cwt.	9 5 0	to	—		
Liquid Glue, per cwt....	5 3 0	to	6	10	0

SLATES.

1st quality slates from Bangor or Portmadoc in truck load delivered London area. Per 1,000 of 1,200.

		£ s. d.
Best Blue Bangor Slates,	24 by 12	46 10 0
,, ,,	22 by 12	42 5 0
First quality ,,	22 by 11	39 0 0
,, ,,	20 by 12	37 2 6
Best Blue Portmadoc	20 by 10	31 15 0
,, ,,	18 by 10	26 5 0
First quality ,,	18 by 9	23 2 6
,, ,,	16 by 10	22 0 0
,, ,,	16 by 8	17 2 6

TILES.

	Per 1,000 f.o.r. London. £ s. d.
Best machine-made tiles from Broseley or Staffordshire district.....	7 0 0
Ditto hand-made ditto.....	7 15 0
Ornamental ditto	8 0 0
Hip and valley tiles (per dozen)	0 12 0

METALS.

JOISTS, GIRDERS, &c., TO LONDON STATION PER TON—

	£ s. d.
R. S. Joists, cut and fitted	14 10 0
Plain Compound Girders	16 10 0
,, Stanchions	18 0 0
In Roof Work	22 0 0

WROUGHT IRON TUBES AND FITTINGS—

(Discount off List for lot of not less than £15 net value delivered direct from Works, 5 per cent; less above gross discounts, carriage forward if sent from London Stocks.)

	Tubes, (all sizes).	Fittings, Up to 2".	Fittings, Over 2".	Flanges, Up to 2".	Flanges, Over 2"
Gas	47½%	45 %	50 %	60 %	65 %
Water	41½%	40 %	45 %	55 %	60 %
Steam	35 %	35 %	40 %	50 %	55 %
Galv'd—					
Gas	32½%	37½%	42½%	52½%	57½%
Water	25 %	32½%	37½%	47½%	52½%
Steam	17½%	27½%	32½%	42½%	47½%

L.C.C. COATED SOIL PIPES—London Prices ex works.

	Pipe. s. d.	Bends, stock angles. s. d.	Branches, stock angles. s. d.
2 in. per yd. in 6fts plain	4 7	3 7	4 4
2½ in. ,,	5 6	3 11	5 5
3 in. ,,	6 6	4 4	6 6
3½ in. ,,	7 2	5 5	7 6
4 in. ,,	8 3	6 1	8 7

RAIN-WATER PIPES, &c.

	Pipe. s. d.	Bends, stock angles. s. d.	Branches, stock angles. s. d.
2 in. per yd. in 6fts. plain	2 11	2 3½	3 1½
2½ in. ,, ,,	3 3	2 8½	3 9
3 in. ,, ,,	3 10½	3 4	5 0
3½ in. ,, ,,	4 6½	3 11½	5 10
4 in. ,, ,,	5 2	4 9½	7 0

L.C.C. DRAIN PIPES.—9 ft. lengths. London Prices per yd.: 4 in., 6/3. .. 5 in., 7/10. .. 6 in., 9/6.

	Per ton in London. £ s. d.		£ s. d.
IRON—			
Common Bars	15 0 0	to	16 0 0
Staffordshire Crown Bars — good merchant quality	16 0 0	..	17 0 0
Staffordshire "Marked Bars"	19 10 0	..	20 10 0
Mild Steel Bars	13 10 0	..	14 10 0
Steel Bars. Ferro-Concrete quality, basis price ..	13 10 0	..	14 10 0
Hoop Iron, basis price ..	21 0 0	..	22 0 0
,, ,, Galvanised ..	34 0 0	..	36 0 0
Soft Steel Sheets, Black— Ordinary sizes to 20 g.	17 0 0	..	18 0 0
,, ,, ,, 24 g.	18 0 0	..	19 0 0
,, ,, ,, 26 g.	19 10 0	..	21 10 0
Sheets Flat Best Soft Steel, C.R. & C.A. quality— Ordinary sizes, 6ft. by 2ft. to 3ft. to 20 g.	23 0 0	..	24 0 0
Ordinary sizes, 6ft. by 2ft. to 3ft. to 22 g. and 24 g.....	24 0 0	..	25 0 0
Ordinary sizes, 6ft. by 2ft. to 3ft. to 26 g...	26 0 0	..	28 0 0
Flat and Galvanised Corrugated Sheets— Ordinary sizes, 6 ft. to 9ft. 20 g.	22 10 0	..	23 10 0
Ordinary sizes, 6ft. to 9ft. 22 g. and 24 g.	23 0 0	..	24 0 0
Ordinary sizes, 6ft. to 9ft. 26 g.	25 0 0	..	27 0 0

METALS (*Continued*).

	Per ton in London. £ s. d.		£ s. d.
Sheets Galvanised Flat, Best quality—			
Best Soft Steel Sheets, 6ft. by 2ft. to 3ft. to 20g. and thicker ..	27 0 0	..	28 0 0
Best Soft Steel Sheets, 22 g. and 24 g.	28 0 0	..	29 0 0
Best Soft Steel Sheets, 26 g.	30 0 0	..	31 0 0
Cut Nails, 3in. to 6in. .. (under 3in. usual trade extras.)	25 0 0	..	26 0 0

METAL WINDOWS—Standard sizes suitable for complete houses, including all fittings, painting two coats, and delivery to job, average price about 3s. per foot super.

LEAD, &c.

	Delivered in London. £ s. d.		£ s. d.
LEAD—Sheet, English, 4 lb. and up	33 0 0	..	—
Pipe in coils	33 10 0	..	—
Soil Pipe	36 0 0	..	—
Compo pipe	37 0 0	..	—

NOTE—Country delivery, 30s. per ton extra; lots under 5 cwt., 1s. 6d. per cwt. extra. Cut to sizes, 2s. cwt. extra.

Old lead, ex London area, at Mills ..... per ton	19 0 0	..	—
Do., ex country, carriage forward..... per ton	20 0 0	—	—
COPPER—			
Strong Sheet ....per lb.	0 2 5	..	—
Thin ,, ... ,,	0 2 4	..	—
Copper nails .... ,,	0 2 3	..	—
Copper wire .... ,,	0 2 4	..	—
TIN—English Ingots ,,	0 1 9	..	—
SOLDER—Plumbers' ,,	0 0 10	..	—
Tinmen's..... ,,	0 1 0	..	—
Blowpipe ..... ,,	0 1 3	..	—

GLASS.

ENGLISH SHEET GLASS IN CRATES OF STOCK SIZES AND IN SQUARES IN ORDINARY SIZES.

	Per Ft.		Per Ft.
15 oz. fourths	4½d.	32 oz. fourths	9½d.
,, thirds	5½d.	,, thirds	11d.
21 ,, fourths	6½d.	Obscured Sheet, 15 oz.	7d.
,, thirds	6½d.	21 ,,	9d.
26 ,, fourths ...	7½d.	Fluted and Enamelled 15 ,,	11d
,, thirds	8½d.	21 ,,	1/2

Extra price according to size and substance for squares cut from stock.

ENGLISH ROLLED PLATE IN CRATES OF STOCK SIZES.

	Per Ft.
¼ Rolled plate	4½d.
⅛ Rough rolled	6d.
¼ Rough rolled	6½d.
Figured Rolled, Oxford Rolled, Baltic, Oceanic Arctic, Stippolyte, and small and large Flemish white	7d.
Ditto, fluted	9½d.
Rolled Sheet	6d.
White Rolled Cathedral	5½d.
Tinted do.	7½d.

Cast Plate is same price as rough rolled.

PAINTS, &c.

			£ s. d.
Raw Linseed Oil	in pipes..... per gallon		0 3 6
,, ,, ,,	in barrels .... ,,		0 3 7
,, ,, ,,	in drums .... ,,		0 3 8
Boiled ,,	in barrels .... ,,		0 3 11
,, ,,	in drums .... ,,		0 4 1
Turpentine	in barrels ..... ,,		0 6 6
,,	in drums (10 gall.) .. ,,		0 6 9
Genuine Ground English White Lead, per ton (In not less than 5 cwt. casks.)			56 15 0

GENUINE WHITE LEAD PAINT—

"Father Thames," "Nine Elms," "Park," "Supremus" and other best brands (in 14 lb. tins) not less than 5 cwt. lots .....per ton delivered		77	0 0
Red Lead, Dry (packages extra) .. per ton		40	0 0
Best Linseed Oil Putty ..... per cwt.		0	17 0
Filocol..... per cwt.		0	15 6
Size. X D Quality..... fkn		0	4 6

VARNISHES, &c.

		Per gallon. £ s. d.
Oak Varnish.....Outside		0 15 0
Fine ditto	ditto	0 17 2
Fine Copal	ditto	1 1 6
Pale Copal	ditto	1 2 6
Pale Copal Carriage	ditto	1 4 6
Best ditto	ditto	1 14 6
Floor Varnish.....	Inside	0 19 0
Fine Pale Paper	ditto	0 18 6
Fine Copal Cabinet	ditto	1 2 6
Fine Copal flatting	ditto	1 0 6
Hard drying Oak	ditto	0 18 0
Fine Hard drying Oak	ditto	0 19 0
Fine Copal Varnish	ditto	1 0 6
Pale ditto	ditto	1 2 6
Best ditto	ditto	1 14 6
Best Japan Gold Size.....		0 12 6
Best Black Japan		0 18 0
Oak and Mahogany Stain (water)		0 17 6
Brunswick Black		0 11 0
Berlin Black.....		0 16 6
Knotting (patent)		1 16 0
French and Brush Polish		1 8 0
Liquid Dryers in Terebine		0 13 6
Cuirass Black Enamel		0 7 0

* The information given on this page has been specially compiled for THE BUILDER and is copyright. Our aim in this list is to give, as far as possible, the *average* prices of materials, not necessarily the highest or lowest. Quality and quantity obviously affect prices—a fact which should be remembered by those who make use of this information.

CURRENT PRICES FOR BUILDING WORK IN LONDON.*

EXCAVATOR.

		s.	d.
Digging and throwing or wheeling and filling carts, and carting away to shoot—6 ft. deep	per yard cube	15	6
Add if in clay	„ „	1	9
Add for every additional depth of 6 ft.	„ „	1	3
Planking and strutting to trenches	per foot super	0	7
Do. to sides of excavation, including shoring	„ „	1	2

CONCRETOR.

Portland cement concrete in foundation 1 to 6 ..	per yard cube	43	0
Add if in underpinning in short lengths	„ „	9	6
Add if in floors 6 in. thick	„ „	3	10
Add if in beams	„ „	4	9
Add if aggregate 1 : 2: 4	„ „	12	0
Add for hoisting not exceeding 10 ft. beyond the first 10 ft.	„ „	4	0

BRICKLAYER.

		£	s.	d.
Reduced brickwork in lime mortar and Fletton bricks	per rod	39	15	0
Add if in stocks	„	8	10	0
Add if in Staffordshire blues	„	25	10	0
Add if in Portland cement and sand	„	3	10	0

FACINGS.

		s.	d.
Extra for facing in English or Flemish bond for every 10s. per 1,000 over the price of the common bricks	per ft. super	0	0 1¼

POINTING.

Neat flat strucks or weathered joint.....	„ „	0	0 3

ARCHES.

Extra only to the price of ordinary brickwork :—			
Fair external in half brick rings	„ „	0	0 11½
Axed in stocks	„ „	0	1 11
Rubbed and gauged jointed in putty camber or segmental	„ „	0	6 8

SUNDRIES.

Damp course in double course of slates breaking joint and bedded in Portland cement	„ „	0	1 5
Setting ordinary register grates and stoves	each	1	1 0
Setting kitchener, including forming flues, &c., with all necessary fire bricks	„	5	5 0

ASPHALTER.

		s.	d.
Half-inch horizontal damp course	per yard sup.	7	6
Three-quarter-inch vertical damp course	„ „	11	8
¾ inch on flats in two thicknesses.....	„ „	8	6
Angle fillet	per foot run	0	3
Skirting and fillet 6 in. high	„ „	1	4

MASON.

York stone templates fixed	per foot cube	16	3
York stone sills fixed	„ „	28	6
Bath stone and all labour fixed	„ „	15	0
Portland stone fixed	„ „	23	0

SLATER.

Welsh 16 in. × 8 in. 3 in. lap, including nails....	per square	98	0
Do. 20 in. × 10 in. Do. Do.	„	115	0
Do. 24 in. × 12 in. Do. Do.	„	117	6

CARPENTER AND JOINER.

Fir framed in plates .....per foot cube		6	9
Do. joists	„ „	7	9
Do. roofs, floors and partitions	„ „	7	9
Do. trusses	„ „	10	0

		¾″	1″	1¼″	2″
Deal rough close boarding	per sq.	42/–	48/–	56/–	85/–

		s.	d.
Flat centering for concrete floor, including struts or hangers .. „		63	0
Do. to beams .....per ft. sup.		1	6
Centres for arches ..... „		2	0
Gutter boards and bearers ..... „		1	6

FLOORING.

		¾″	1″	1¼″	1½″
Deal-edges shot	per sq.		49/–	58/–	67/–
Do. tongued and grooved	„		54/–	65/–	72/–
Do. matchings	„	45/–	55/–		
Moulded skirting, including backings and grounds .....per ft. sup.		1/8	2/1	2/3	2/9

SASHES AND FRAMES.

		s.	d.
One-and-a-half moulded sashes or casements	per foot super	1	11
Two Do. Do. Do.	„ „	2	4½
Add for fitting and fixing	„ „	0	6
Deal-cased frames with 1 in. inner and outer linings, 1¼ in. pulley stiles tongued to linings, hard wood sills with 2 in. moulded sashes in squares double hung, double hung with pulleys, lines and weights; average size.....	„ „	4	9

DOORS.

		1¼″	1¾″	2″
Two-panel square framed .....per ft. sup.		2/6	2/9	2/11
Four-panel Do.	„	2/10	3/2	3/5
Two-panel moulded both sides	„	3/2	3/5	3/8
Four-panel Do. Do.	„	3/6	3/9	4/–

CARPENTER AND JOINER—continued.

FRAMES.

		s.	d.
Deal wrot moulded and rebated	per foot cube	15	6

		1″	1¼″	1½″
Plain deal jamb linings framed	per ft. sup.	1/11	2/–	2/3
Deal shelves and bearers	„	1/8	1/10	2/1
Add if cross tongued	„	2d.	2d.	2d.

STAIRCASES.

	1″	1¼″	1½″	2″	2½″
Deal treads and risers in and including rough brackets	2/3	2/6	2/11	—	—
Deal strings wrot on both sides and framed	1/9	2/1	2/3	2/9	—

		s.	d.
Housings for steps and risers	each	0	11½
Deal balusters, 1 in. × 1¼ in.	per ft. run.	0	9
Mahogany handrail; average 3 in. × 3 in.	„ „	6	0
Add if ramped	„ „	11	10
Add if wreathed	„ „	23	9

FIXING ONLY IRONMONGERY (INCLUDING SCREWS).

6 in. barrel bolts	8½d.	Rim locks	2/4½
Sash fasteners .....11½d.		Mortice locks	5/3
Casement fasteners	1/5	Patent spring hinges and letting in to floor and making good	19/–
Casement stays.....	1/2		
Cupboard locks	1/5		

FOUNDER AND SMITH.

		s.	d.
Rolled steel joists	per cwt.	20	0
Plain compound girders.....	„	23	0
Do. stanchions	„	26	0
In roof work	„	31	0

RAIN-WATER GOODS.

		3″	4″	5″	6″
Half-round plain rebated joints ..	ft. run	1/11	2/4½	3/7	4/–
Ogee Do. Do. ..	„	2/4½	3/1	3/10	4/9
Rain-water pipes with ears	„	2/9	3/7		
Extra for shoes and bends	each	4/4	5/11		
Do. stopped ends	„	1/11	2/4½	3/7	4/–
Do. nozzles for inlets	„	2/2	2/7	3/10	4/3

PLUMBER.

		s.	d.
Milled lead and laying in flashings and gutters	per cwt.	56	0
Do. Do. in flats	„	52	0
Extra labour and solder in coated cesspools	each	7	4
Welt joint	per ft. run.	0	6
Soldered seam	„ „	1	10
Copper nailing	„ „	0	7

		½″	¾″	1″	1½″	2″	4″
Drawn lead waste	per ft. run	10d.	1/6	1/9	3/1	3/10	
Do. service	„	1/5	1/11	2/3	3/6		
Do. soil	„						5/2
Bends in lead pipe	each					3/3	8/2
Soldered stop ends	„	1/2	1/8	2/1	2/10	3/6	
Red lead joints	„	11d.	1/–	1/3	1/11	2/4	4/10
Wiped soldered joints	„	2/10	3/6	4/–	4/11	6/6	9/9
Lead traps and cleaning screws	„				14/7	19/6	
Bib cocks and joints ..	„	6/4	9/7	15/4	41/–		
Stop cocks and joints	„	15/4	17/2	25/8	64/–		

PLASTERER.

		s.	d.
Render, float and set in lime and hair	per yard sup.	3	2
Do. Do. Sirapite	„ „	3	7
Do. Do. Keen's	„ „	4	9
Add sawn lathing	„ „	1	9
Add metal lathing	„ „	3	0
Portland cement screed	„ „	2	9
Do. plain face	„ „	4	6
Mouldings in plaster	per 1 girth	0	3
One-and-a-half granolithic pavings	per yard sup.	6	7

GLAZIER.

		s.	d.
21 oz. sheet plain	per foot sup.	1	1
26 oz. Do.	„ „	1	4
Obscured sheet	„ „	1	8
⅛ in. rolled plate	„ „	1	0
⅛ in. rough rolled or cast plate	„ „	1	1
¼ in. wired cast plate	„ „	1	7

PAINTER.

		s.	d.
Preparing and distempering, 2 coats	per yard sup.	1	3
Knotting and priming	„ „		8
Plain painting 1 coat	„ „	1	0
Do. 2 coats	„ „	1	9
Do. 3 coats	„ „	2	6
Do. 4 coats	„ „	3	3
Graining	„ „	2	8
Varnishing twice	„ „	2	0
Sizing	„ „	0	4
Flatting	„ „	0	8
Enamel	„ „	1	6
Wax polishing	per foot sup.	0	10½
French polishing	„ „	1	3
Preparing for and hanging paper	per piece	2/– to 4/–	

* These prices apply to new buildings only. They cover superintendence by foreman and carry a profit of 10% on the prime cost without establishment charges. A percentage of 1½ should be added for Employers' Liability and National Health and Unemployment Acts and from 1s. 6d. per £100 for Fire Insurance. The whole of the information given on this page is copyright.

PATENTS.

APPLICATIONS PUBLISHED.*

156,157.—K. R. Haerting: Stone and like working machines.

170,033.—W. P. Hayes and P. G. Hayes: Concrete building.

170,044.—C. E. Stephens: Dining and other household chairs.

170,063.—H. Wade (Bombrini Parodi Delfino): Manufacture of slow-setting cement.

147,091.—H. Gagneau: Resilient floors for skating.

147,598.—L. Callenberg: Walls for wooden houses.

147,799.—R. Plonnis: Preparation of fireproof and water-proof paint.

148,135.—O. Smreker: Manufacture of articles of cement.

170,084.—T. Furniss: Capping and jointing means for roofing slabs.

150,312.—M. Fatio: Concrete blocks and like elements of construction.

170,199.—G. H. Downes: Ladders.

170,214.—G. J. Dean: Desk seat adapted for use in schools and other institutions.

170,217.—B. Housiaux: Construction of collapsible packing-case or other container.

170,238.—H. T. Gooding and F. McKenna: Treads for stairs and the like.

170,337.—London Aluminium Co., Ltd., and W. J. Leeder: Method of jointure for sheet metal.

170,363.—T. W. Fade: Combined hinge and holder for doors.

170,389.—M. B. Jackson, jun.: Wood-turning machines.

149,689.—O. Frohlich: Adjustable framework for structural purposes.

170,446.—J. Galbraith: Bridges, dock and canal gates.

170,456.—H. P. Amphlett and Hume Pipe & Concrete Construction Co., Ltd.: Metal reinforcement for concrete or like products.

170,458.—R. J. Porter: Mushroom ventilators.

170,495.—E. H. Haney: Hoists for building materials.

170,497.—N. P. Nielsen: Method of producing or treating cement goods or objects.

170,527.—J. Bellis: Construction of fireplace curbs.

160,448.—W. Hackett: Bolt fastenings.

169,949.—J. A. John Akt. Ges.: Ventilating-cowls.

170,541.—W. P. Hayes and P. G. Hayes: Concrete building

128,927.—J. P. B. Bessonneau and C. H. Besnard: Roofs.

170,607.—R. L. Poe: Kitchen-ranges.

154,871.—A. Renyi, P. Renyi and S. Renyi: Pasteboard roofs.

170,611.—G. C. Thomas: Machinery for the manufacture of artificial stone blocks.

170,622.—F. Brettschneider: Manufacture of bricks.

170,693.—N. Cohen and S. Cohen: Device for use in forming or moulding buildings in sand.

170,741.—H. Addison: Method of constructing slabs and walls, and floors formed therewith.

170,782.—N. Liptak: Fire-arches for furnaces.

170,787.—H. Matthews: Bolts.

170,793.—P. W. Flavel: Convertible domestic fire-places and cooking stoves.

142,487.—H. Bassmann: Manufacture of resistant porous concrete pipes.

170,875.—J. Thomas: Sash-fasteners.

170,884.—A. J. Francois: Reinforced-concrete linings for mineshafts, tunnels and underground roadways.

170,891.—W. K. Edwell: Domestic water-heater.

170,903.—F. S. Sumpter and R. F. F. Hamlett: Machines for making concrete blocks and slabs.

170,907.—W. McCrea: Roof glazing.

170,912.—A. Francois: Cementation methods in connection with shaft-sinking for cutting off a large flow of water.

*All these applications are now in the stage in which opposition to the grant of Patents upon them may be made.

TENDERS.

Communications for insertion under this heading should be addressed to "The Editor," and must reach him not later than Tuesday evening.

***Denotes *accepted*. † Denotes *provisionally accepted*.**
‡ Denotes *recommended for acceptance*.
§ Denotes *accepted subject to modifications*.

BATH.—Exterior painting at Royal and Queen's Baths, for the T.C.:—
*J. Long & Sons..... £170

BATH.—Tiling walls of the dressing room at Roya Swimming Bath, for the T.C.:—
*F. J. Amery & Son..... £416

BRIDLINGTON.—For alterations to shop and premises, No. 4, Garrison-street, for Mr. J. T. Grantham. Mr. J. R. Earnshaw, architect and surveyor, Cliff-street Chambers, Bridlington:—
*Sampson & Usher, Bridlington.. £839 13 4

BURNLEY.—Supply of 600 dustbins, to the T.C.:—
*J. Bulcock, Burnley..With lids, 8s. 1d. each; without lids, 6s. 11d. each.

BURNLEY.—For painting exterior of Town Hall for the T.C.:—
*Leeming Bros., Burnley..... £225 5 5

BURSLEY.—For the paving of sections of streets for the T.C.:—
*J. Green & Sons—

Barbon-street	£642	1	3
Reynolds-street	241	11	2
Byron-street	473	1	9
Back-street	148	17	10

CARNABY (NEAR BRIDLINGTON).—For erection of four cottages and buildings, and fencing and gates, on the Wilsthorpe Estate, for the East Riding C.C. Mr. J. Bickersteth, Clerk, County Hall, Beverley, Yorks:—

Four Houses and Buildings—			
F. J. Whiting, Cottingham	£4,500	0	0
J. T. Levitt, Hull	3 850	0	0
R White & Sons, Hull	3,639	0	0
Fell & Sons, Filey	3,507	0	0
Sawdon Bros., Filey	3,300	0	0
*John Sawdon, Bridlington	3,100	0	0
Fencing and gates—			
F. J. Whiting, Cottingham	343	19	6
Sawdon Bros., Filey	280	0	0
R. White & Son, Hull	191	19	8
R. Chivers, Fraisthorpe, Bridlington	189	12	4
*T. B. Arksey, Carnaby, Bridlington	174	0	0

GOLDTHORPE.—For the erection of a new cinema at Barnsley-road, Goldthorpe. Messrs. A. Whitaker & Son, 18, Bank-street, Sheffield:—
*Williams & Kemp, Morton, near Alfreton.

GLASGOW.—For works at Couper Institute, Cathcart, for the T.C.:—

Digger, mason, brick, and steelwork—			
*Robert Gilchrist & Son, Ltd.	£8,234	13	5
Carpenter, joiner, glazier, and ironmonger works and steel roofing—			
*F. D. Cowieson & Co.	7,504	2	6
Lath and plaster work—			
*John Rome & Co.	2,154	13	6
Tile work—			
*J. Youden & Sons	1,898	7	3
Plumber work—			
*John Paterson & Co. (Glasgow), Ltd.	1,090	7	7
Slater work—			
*A. C. Whyte & Co.	118	9	4

GLASGOW.—For electric lighting installation at houses at Craigton, for the T.C.:—
*D. & J. Gilmour £3,769 17 0

HARPENDEN.—For widening, sewering, draining, kerbing, channelling, and making-up Station-road (part of), for the U.D.C. Mr. John H. Leverton, Surveyor, Public Hall, Harpenden:—

E. Ireson	£10,300	4	2
Roads & Public Works, Ltd.	9,944	15	4
Radford, Tebbs & Co.	8,741	8	10
C. A. White	8,496	1	4
W. Thompson	8,467	6	8
C. V. Buchan & Co.	8,337	0	0
C. P. Trentham, Ltd.	8,168	0	0
W. Manders & Co.	7,995	19	10½
John Mowlem & Co.	7,571	11	10
Campbell, Kenyon & Co.	7,437	9	0
H. & R. Hall	7,417	0	0
C. F. Cole	7,372	4	5
John Cronk	7,325	0	2
Winter & Ward	7,160	0	0
Willis, Brumbridge & Co.	7,016	3	5
Thos. W. Pedrette	6,996	17	11
Payne Bros.	6,900	0	0
Sidney A. Smith	6,885	10	1½
Hodsons, Ltd.	6,853	8	4
*E. C. Jarvis, Harpenden	6,852	19	2
Surveyor's Estimate	7,171	9	0

KEIGHLEY.—For execution of the work and supply of all material required in extensions to the boiler-house and coal-conveyor at the electricity works, for the T.C.:—
*Babcock & Wilcox..... £4,349

LEEDS.—For sluice valves and special castings for Knostrop sewage works, for the T.C.:—
*Ham, Baker & Co..... £1,008 18

LEEDS.—Supply of shelters to the T.C.:—
*H. C. Bridge—

Middleton Park—One large shelter	£175
Three small shelters	225
Potternewton Recreation Ground—One large shelter	175
Three small shelters	225
"*The Hollies*," *Westwood*—Three small shelters	225

LEEDS.—Alterations to and extension of fire brigade station, for the T.C.:—
*F. Reddyhoff & Son..... £616 10

LEEDS.—Construction of two bacteria beds at Rodley sewage works in connection with unemployment relief schemes, for the T.C.:—
*H. Atkinson & Sons..Net cost of labour and materials, plus £950 for overhead charges, &c.

LINCOLN.—For (*a*) laying of foundation of war memorial in front of St. Benedict's Church; and (*b*) erection of memorial, for the War Memorial Committee:—
*W. Wright & Son, Lincoln.....(*a*) £199 12
(*b*) 1,915 0

LONDON.—For asphalte work in Shirland-road, for the Paddington B.C.:—
*Limmer & Trinidad Lake Asphalte Co. ..... £998 (approx.)

LONDON.—For adapting and extending the building at Bethnall House for the purposes of public library, for the Bethnal Green B.C.:—

C. Peppiatt, Chiswick	£28,241	0	0
J. Galloway & Co., N.1	28,018	0	0
Brand, Pettit & Co., Tottenham	27,675	0	0
R. Woollaston & Co., Limehouse	27,370	0	0
Small & Sons, Ltd., E.C.1	26,462	15	0
Surrey Downs Building Co., Ltd., Purley	25,483	0	0
Chessums, Ltd., Tottenham	24,997	19	5
John Willmott & Sons, Ltd., Hornsey	24,658	0	0
Henry Knight & Son, Tottenham	24,544	0	0
Galbraith Bros., Ltd., Camberwell	24,200	0	0
Allen Fairhead & Son, Enfield	23 932	0	0
George Bollom, Acton	23,347	0	0
*Patman & Fotheringham, Ltd., Islington	23,197	0	0
F. & G. Foster, S.E.	22,748	0	0
Dilliway & Elvy, Kensington	22,320	0	0

LONDON.—For paving works at Blackstock-road, Newington Green, and Stroud Green-road, for the Islington B.C.:—

Limmer & Trinidad Lake Asphalt Co., Ltd., S.W. (two years' maintenance)	£11,686 17 6
French Asphalte Co., Ltd., E.C. (three years' maintenance)	11,221 15 0
London Asphalte Co., Ltd., E.C. (three years' maintenance)	11,159 5 0
*Val de Travers Asphalte Paving Co., Ltd., E.C. (three years' maintenance)	10,980 0 0

LONDON.—For supply of castings, &c., for the Works Department of the Islington B.C.:—

Long, Humphreys & Co., Clapham Junction—Patent manhole covers	72s. each
Patent gully gratings	85s. each
Sidney Stone & Co., Ltd., S.W.1	£578 17 0
Jas. Gibb & Co., E.C.3	410 19 0
W. E. Horseman & Son, Mitcham	392 17 0
A. E. Woodrow, W.C.1	371 7 6
Frederick Bird & Co., West Drayton	366 11 0
*South of England Agricultural Machinery Co., Ltd., Tonbridge	348 0 0

LONDON.—For the supply and fixing of the hurdles and gates required in connection with the making of the new approaches to the Public Library to be established at Bethnall House, for the Bethnal Green B.C.:—

Hill & Smith, Ltd.	£490	16	4
Clark, Hunt & Co., Ltd.	471	9	3
Wm. Miller & Sons, Ltd.	455	5	0
General Iron Foundry Co., Ltd.	445	18	3
Armstrongs & Main, Ltd.	441	4	0
Bayliss, Jones & Bayliss, Ltd.	440	3	6
W. Hayward & Sons, Ltd.	425	5	0
D. Rowell & Co., Ltd.	404	15	1
*T. W. Palmer & Co.	394	7	3

LONDON.—For the supply of tar slag macadam required for the paving of the new approaches to be made through Bethnal Green Gardens to Bethnall House, for the Bethnal Green B.C.:—

	2½ in. gauge at per ton. s. d.	½ in. topping at per ton. s. d.	⅜ in. topping at per ton. s. d.
P. Shepherd & Co., Ltd.	(*a*) 47 6	(*a*) 49 0	(*a*) 52 0
Constable Hart & Co.	(*b*) 36 3	(*b*) 38 0	(*b*) 42 6
*Tarmac, Ltd.	(*b*) 35 10	——	(*b*) 37 10

(*a*) Delivered on to job. (*b*) Delivered Devonshire-street Station.

MIDDLESEX.—For construction of the Great West-road from Syon-lane, Isleworth, to Boston-road, New Brentford, including a new bridge to carry the Brentford branch of the Great Western Railway, and a new bridge to carry the road over the Grand Junction Canal, for the Middlesex C.C. :—

Acme Flooring & Paving Co. (1904), Ltd.	£422,992	19	10
G. Percy Trentham, Ltd.	387,300	0	0
Muirhead, Macdonald, Wilson & Co., Ltd.	329,083	14	0
Baldrey, Yerburgh & Hutchinson, Ltd.	326,942	5	7
Walter Scott & Middleton, Ltd.	325,296	0	4
Henry Boot & Son	322,612	0	0
Sir John Jackson, Ltd.	322,452	13	10
Consolidated Construction Co., Ltd.	318,576	17	3
John Moffat	317,793	18	5
S. Pearson & Son, Ltd.	308,708	15	11
Walter Lawrence & Son, Ltd.	289,499	0	0
Mitchell Bros., Sons & Co., Ltd.	284,505	11	8
Chas. Brand & Son	283,415	2	10
Unit Construction Co., Ltd.	281,044	3	5
Henry Woodham & Sons, Ltd.	280,127	2	0
Trollope & Colls, Ltd.	279,500	0	0
Holloway Bros. (London), Ltd.	274,073	0	0
J. Mowlem & Co., Ltd.	273,522	6	5
Campbell, Kenyon & Co.	268,969	10	6
Moss & Sons, Ltd.	262,223	0	0
Walter Jones & Sons	261,190	0	0
A. Jackaman & Son, Ltd.	260,390	0	0
Sir Wm. Arrol & Co., Ltd.	248,594	12	3
*Frank Hayes	219,282	0	0

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Telegrams: GLIKSTEN 'PHONE LONDON.

ROTHERHAM.—For the erection of houses, for the T.C. :—

*T. Jenkinson & Son, Doncaster..26 houses at £495 each.
*Swift & Haslam, South Elmsall..28 houses at £580 each.

SALFORD.—Supply of 20-ton weighbridge at Broughton Town Hall, for the T.C. :—

*W. Hodgson & Sons, Salford £405

SALFORD.—For providing additional office accommodation at Frederick-road electricity station, for the T.C. :—

*J. F. Moore, Eccles £883 12 10

SALFORD.—For supplying and fixing heating boilers at (*a*) Cheetham Hill Wesleyan School, and (*b*) Nashfield-street Council School, for the T.C. :—

*(*a*) Newton, Chambers & Co., Manchester £120 0
*(*b*) Elliott, Ellis & Co., Manchester.. 106 7

SALFORD.—For making up Radford-street, Monsel avenue, Matlock-avenue, Calton-avenue and Shirley-avenue, for the T.C. :—

*W. Turner (Ardwick), Ltd..... £3,693 6 7

SALFORD.—For excavating, p tching, flagging, asphalting and tar-macadamising streets in connection with the housing schemes, for the Corporat on. The Borough Engineer, Town Hall, Salford :—

Flagging, asphalting and tar-macadamising—
*W. Turner (Ardwick), Ltd., Manchester £3,693 6 7
Excavating and pitching—
*W. H. Worthington, Ltd., Manchester 1,877 1 8

SALFORD.—For levelling and pitching foundations of steel on Section 2 of the Littleton-street housing site, for the T.C. :—

*W. H. Worthington, Ltd., Manchester £1,877 1 8

SOUTH SHIELDS.—Supply of 15-ton weighbridge to the T.C. :—

*W. & T. Avery..... £480

SUNDERLAND.—For construction of a mass concrete gasholder tank, 127 ft. 6 in. dia. by 25 ft. 8 in. deep, for the Sunderland Gas Co. Mr. C. D. Drury, Engineer, Hendon Gas Works, Sunderland :—

*Robt. Hudson & Sons, Sunderland.. £11,850

WARE.—For works of extension, adaptation, &c., at Ware Park Sanatorium, for the Herts C.C. :—

Norris & Sons, Hertford	£7,182 0
Hitch & Co., Ware	6,987 16
Miskin & Sons, St. Albans	6,592 0
Blow & Peters, St. Albans	6,566 0
*Elkins & Co., Ltd., Hertford	6,460 0

WIMBLEDON.—For repair of chimney stack at Electricity Works, for the B.C. :—

*G. Aldington, Wimbledon £102 10

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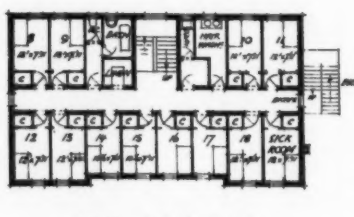
N.W.1

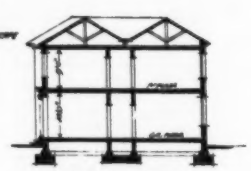
WATFORD AND DISTRICT PEACE MEMORIAL HOSPITAL.

SCALE OF FEET.

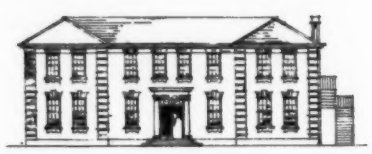
NURSES HOME « 1ST SECTION »



« FIRST FLOOR PLAN »

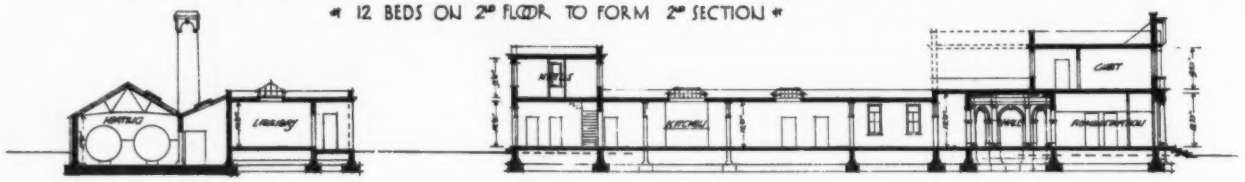


« CROSS SECTION »

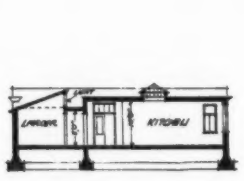


« FRONT ELEVATION »

« 12 BEDS ON 2ND FLOOR TO FORM 2ND SECTION »



« LONG SECTION THROUGH MIDDLE BLOCK »



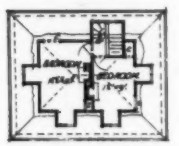
« CROSS SECTION THRO' KITCHEN »

PORTERS LODGE

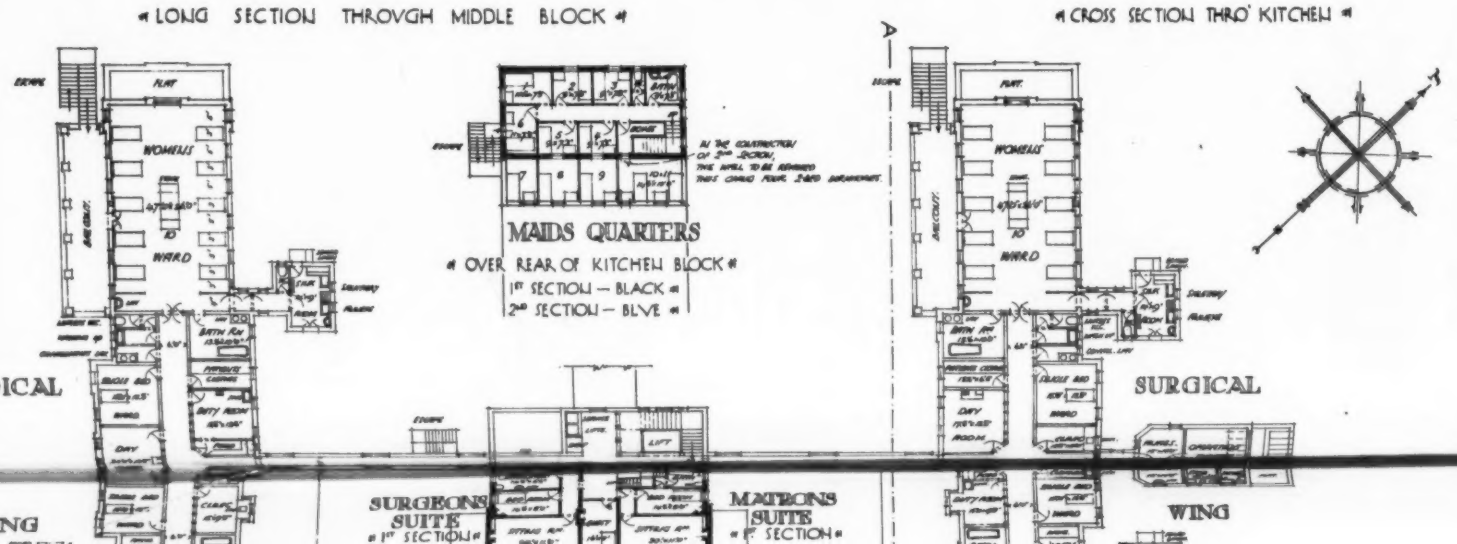
« S.E. ELEVATION »

« SECTION »

« GROUND FLOOR »



« FIRST FLOOR »

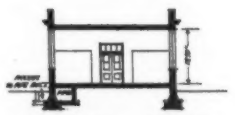


THE BUILDER FEBRUARY

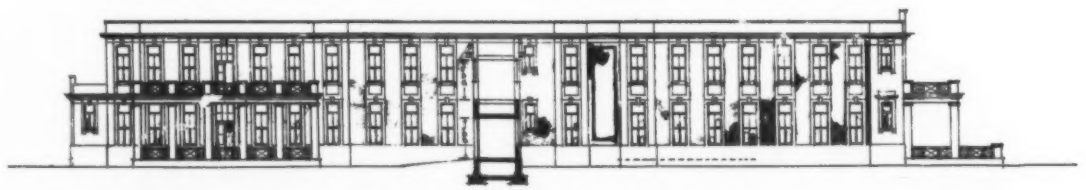
FIRST FLOOR PLAN

« 2ND SECTION IN BLVE »

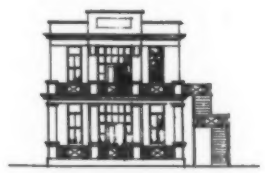
« ELEVATION ON LINE A.A. « 1ST SECTION »



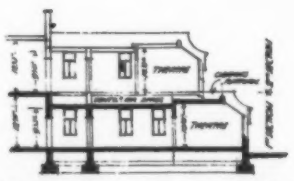
« SECTION of WARD »
« 1ST SECTION »



« ELEVATION ON LINE AA. « 1ST & 2ND SECTIONS »



« FRONT ELEVATION of WARDS »
« 1ST & 2ND SECTIONS »



« SECTION THRO' OPERATION BLOCK »
« 1ST & 2ND SECTIONS »

« SOUTH-WEST ELEVATION » 1ST SECTION »

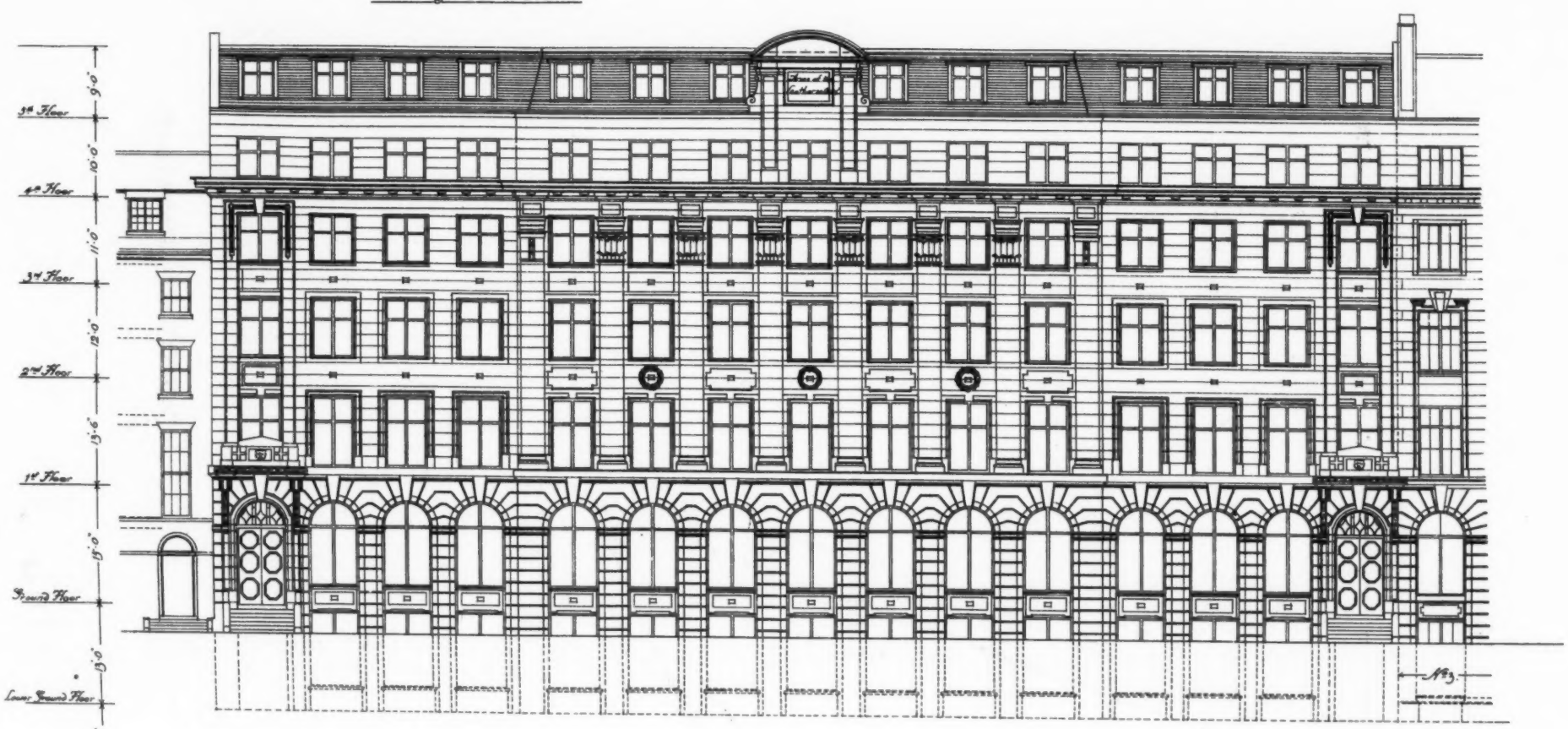
SECOND PREMIATED DESIGN. BY MR. ALAN E. MUNBY, F.R.I.B.A.

BUILDER, FEBRUARY 10, 1922.

Rebuilding of Nos 6 to 11 St Helens Place, E.C. 3.
For The Great Northern Telegraph Co Ltd

10 5 0 10 20 30 40 50 60 70 Feet.

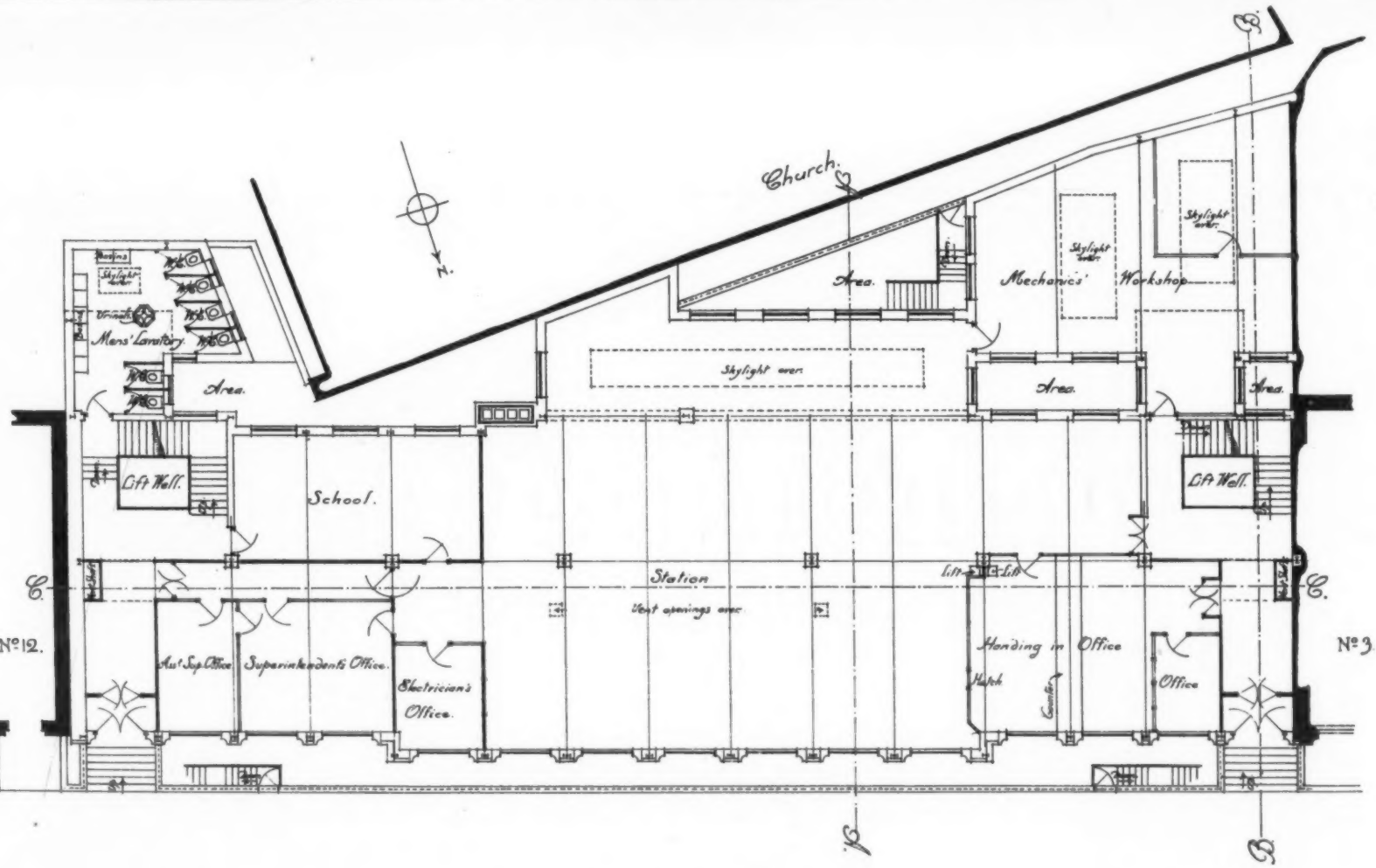
Scale. Eight Feet to an Inch.



Front Elevation.

THE BUILDER, May 10, 1

Front Elevation.

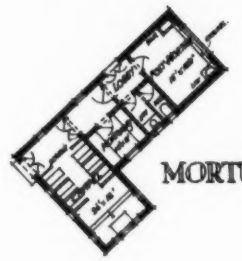


Ground Floor Plan.

Henry A. Saul. F.R.I.B.A.
Architect.
10 Grays Inn Square, W.C.1.
October 1921.

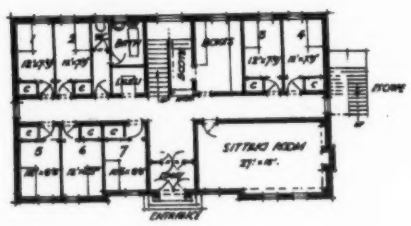
WATFORD AND DISTRICT PEACE MEMORIAL HOSPITAL.

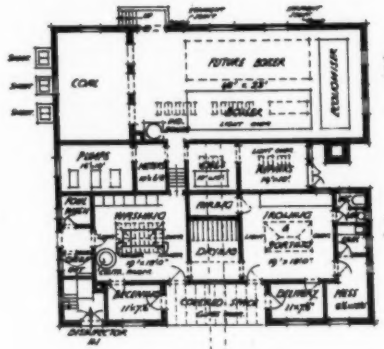
SCALE OF FEET.



MORTUARY

NURSES HOME

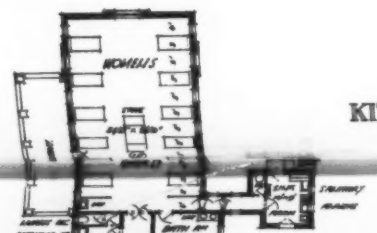


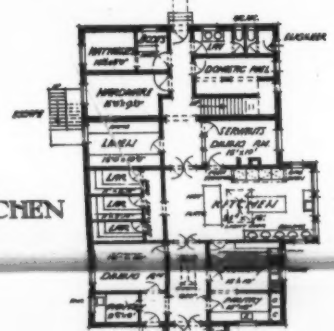


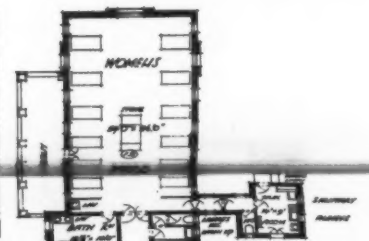
POWER BLOCK

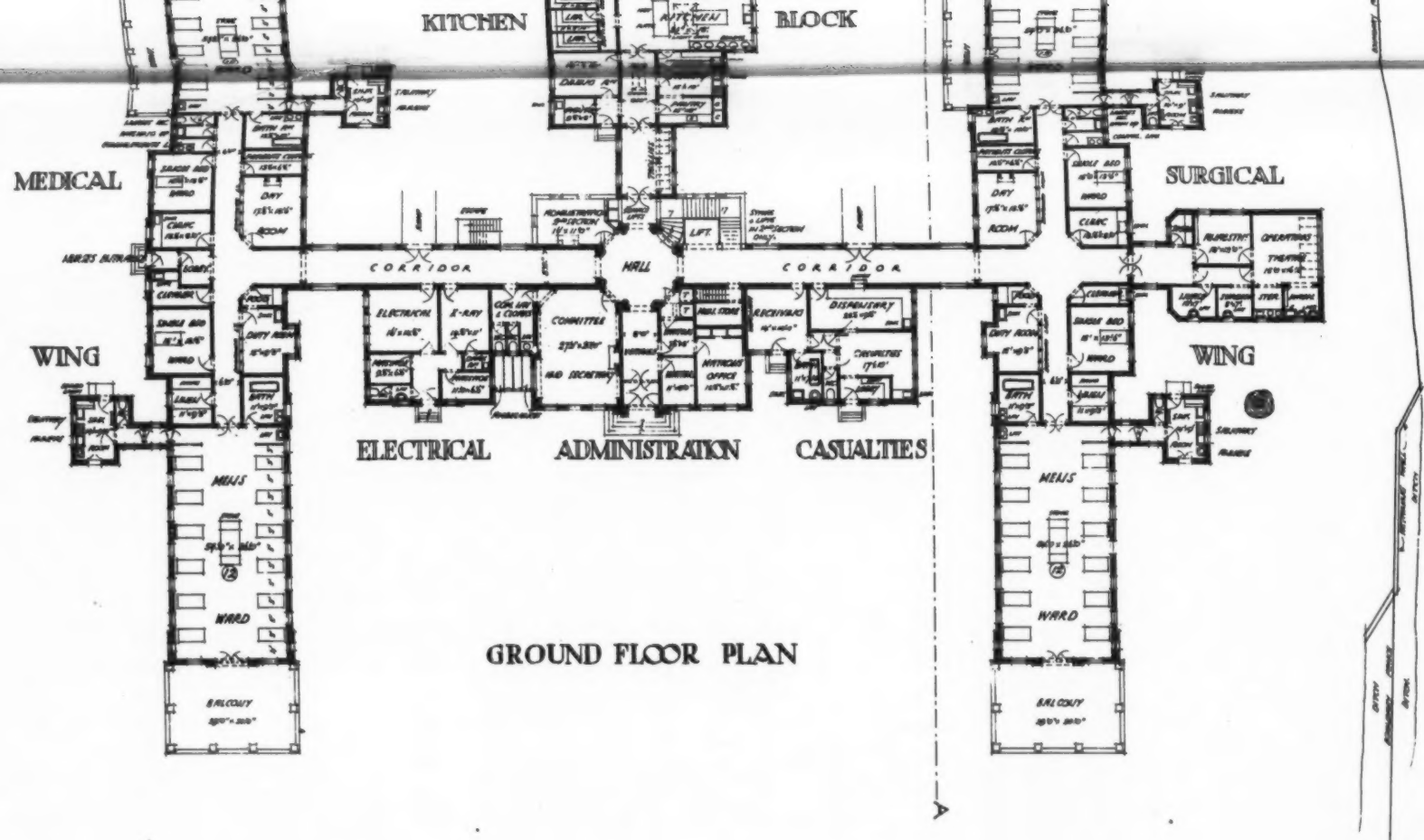
LAUNDRY BLOCK

KITCHEN BLOCK

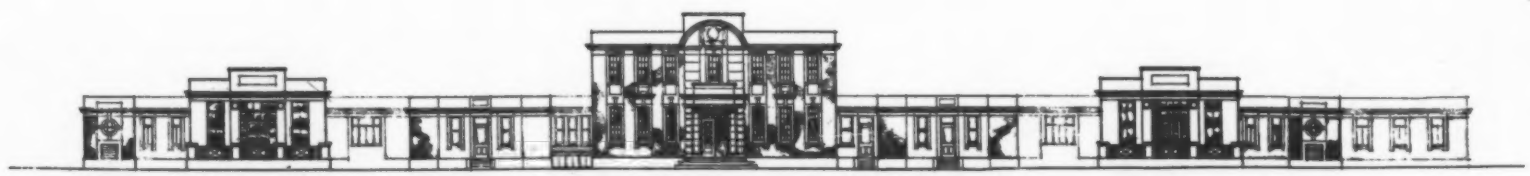








GROUND FLOOR PLAN



FRONT ELEVATION. 1st SECTION

SECOND PREMIATED DESIGN. BY MR. ALAN E. MUNBY, F.R.I.B.A.